FEBRUARY 1951

PLEASE ROUTE THIS COPY TO	
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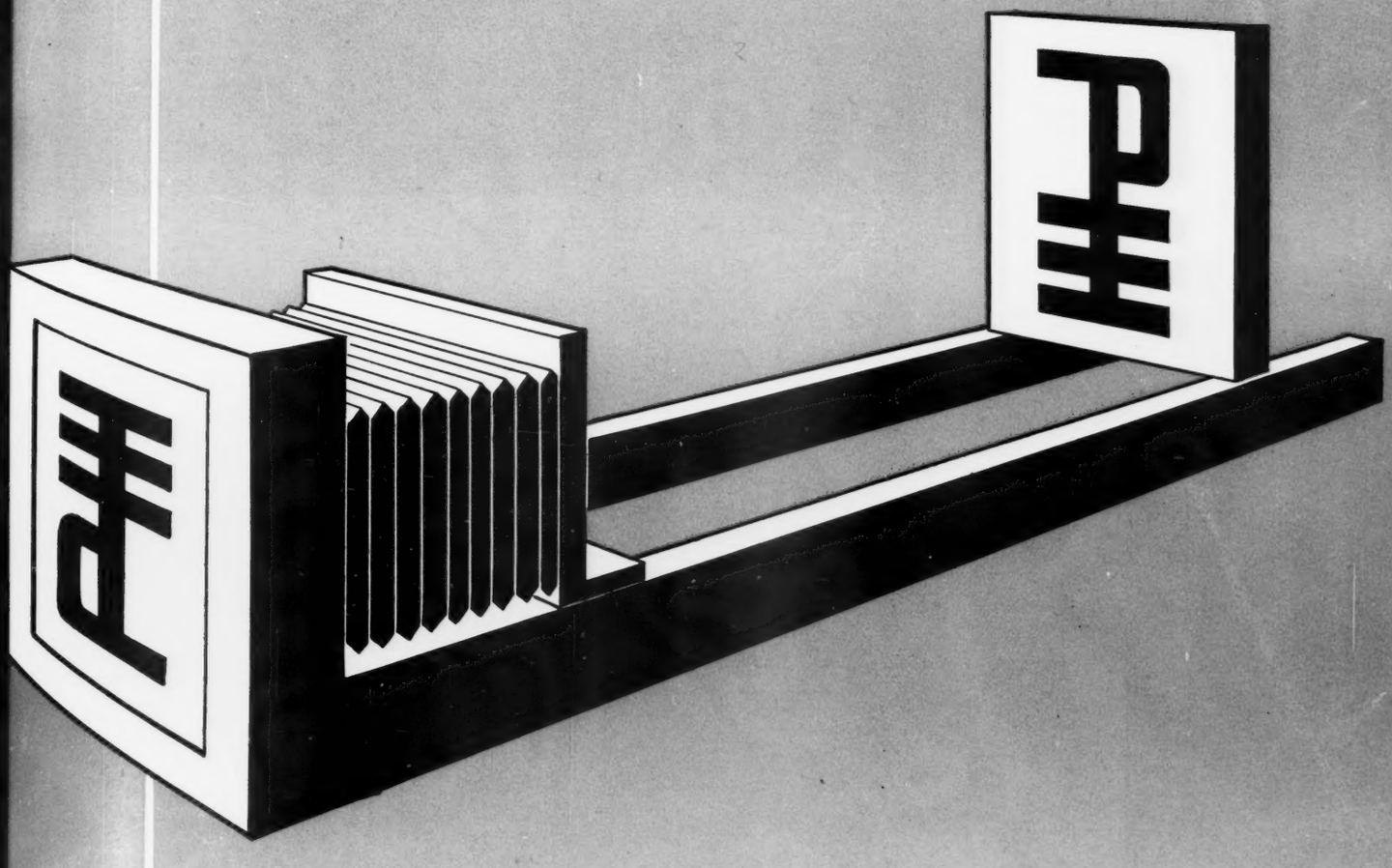
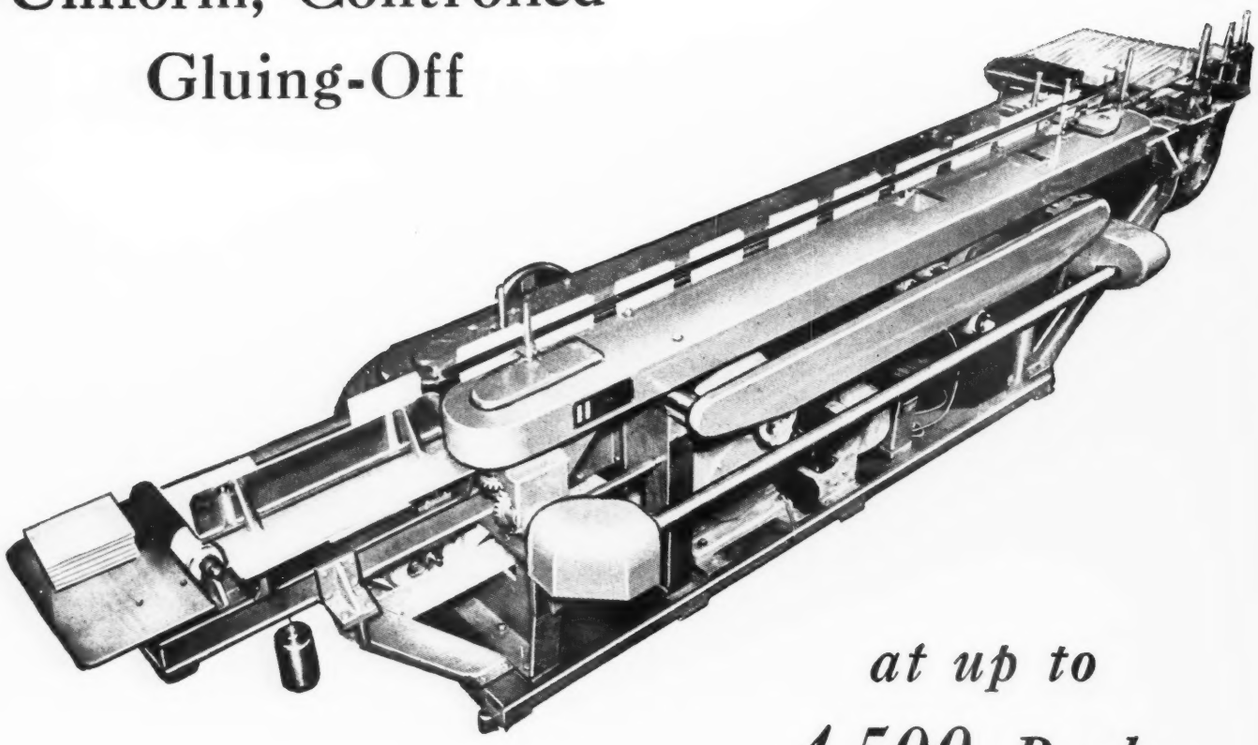
Production Mgr.	Bindery F'm'n
Plant Supt.	Mailing F'm'n
Platemaking F'm'n	Maintenance Supt.
Composing F'm'n	Purchasing Agt.
For filing, please return to	

PRINTING EQUIPMENT *Engineer*



AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Uniform, Controlled Gluing-Off



at up to

4,500 Books

per hour!

With the McCain Book Back Gluing Machine a crew of three can glue off approximately 4,500 6 x 9" (1½" to 2¼" thick) books per hour.

Books are fed in by hand or by automatic feeder and are carried along between moving belts. Backs are rolled over glue wheel which applies a metered amount of adhesive, any type — hot melt, cold synthetic or animal glue — Thence they move to the automatic brushing equipment. A minimum amount of adhesive is used on each job, with resulting economy. Positive penetration is had between signatures and any excess glue is removed.

Each book spine as it passes to delivery end is subjected to a blast of cold air. Using hot melt adhesives, books may be fed directly into rounder and backer, if desired. As piler takes books from delivery end, they are stacked back to front, with books slightly offset.

We'll be glad to survey your plant set-up and tell you how the McCain Book Back Gluing Machine may increase your production and profit.

—— • ——

McCain • Christensen • Dexter

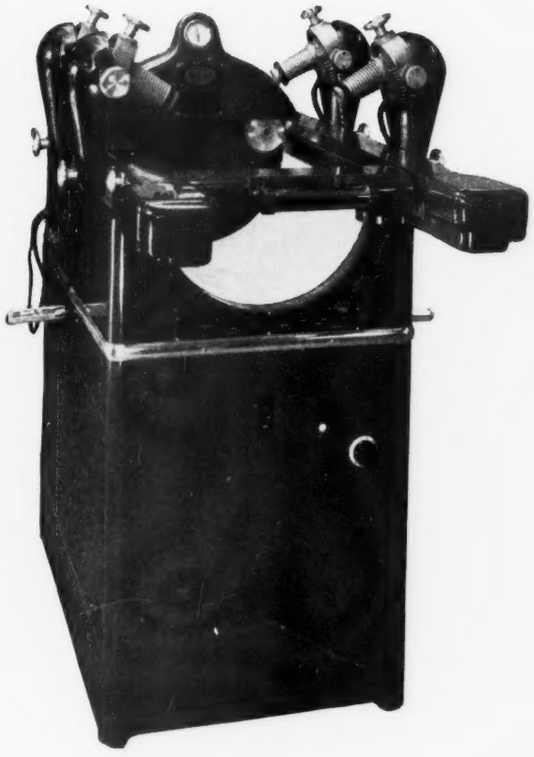
Modern Machines for Printers and Binders

Dexter Folder Company, General Sales Offices, 330 West 42nd Street, New York 18, N. Y.

Associated with the de Florez Company for Special Engineering

Branch Offices, Domestic and Foreign Agents

the perfect "combination" for better newspaper color printing!



STA-HI *Master Trimmer*

This Curved Mat Color Registering Machine enables you to obtain perfect register in the stereotype page mats **before plates are cast.** It simplifies the entire color registering process, makes possible **speed and precision;** eliminates need of recasting plates, "cocking" plates on the press, and "shimming".

STA-HI *Master Router*

This Curved Plate Routing Machine has been praised by progressive newspaper publishers for its **safety, ease of operation** and **accurate performance.** It is completely enclosed to eliminate the hazard of flying metal chips. Quiet in operation, it has a glare-proof, shadow-proof lighting system and an **automatic power "stripper"**— a STA-HI exclusive!

Sta-Hi Corporation

"SUPERIOR NEWSPAPER PRODUCTION MACHINERY"

235 W. WASHINGTON BOULEVARD ● BOX 152, WHITTIER, CALIFORNIA

IPI • DIVISION OF INTERCHEMICAL CORPORATION • 67 WEST 44th ST., NEW YORK 18 • ADDRESS INQUIRIES DEPT. A

MAQUA GETS PRAISE FOR G-E CALENDAR PRINTED WITH IPI PROCESS COLORS

Superb Printing Captures Spirit of Work by Ten Noted Artists

Want a hearty round of applause for your process printing? Then take a tip from The Maqua Company, Schenectady, N. Y. This firm rates high praise for its top-notch printing of the 1951 General Electric calendar with IPI process inks. Ten famous artists, selected by G. E., painted the 12 colorful and widely varied subjects.

Process inks must be especially good to so faithfully capture the spirit of this original art. And they must be extra versatile to cover such a wide range of subjects—from light summer skies to black shadows of a coal mine. No wonder that Maqua, like so many fine printing firms, chose IPI process inks.

These calendars were printed on a Miehle two-color press at 1500 iph. The lucky 330,000 folks who get them will have a full year of visual pleasure and service. Try IPI process inks for best results in your shop—every time.

IPI, Everyday and Gemtone are trademarks of Interchemical Corporation.

FINE ARTS PRINTING WITH EVERYDAY INK RIVALS GRAVURE QUALITY, TONE, DETAIL

Garrett & Massie Produce Superb Healy Catalog for Virginia Museum

At first glance you might say "Healy's Sitters" is excellent gravure printing. It's hard to believe that this fine booklet was produced by letterpress. The black & white halftones—some as small as $1\frac{1}{2}$" x $1\frac{7}{8}$"—catch the smallest details of even life-size, full-color paintings.

Garrett & Massie, Inc., of Richmond, Virginia, needed no special ink formulation for this booklet. They printed it for the Virginia Museum of Fine Arts on a Miehle 00 with Everyday Dull Halftone Black.

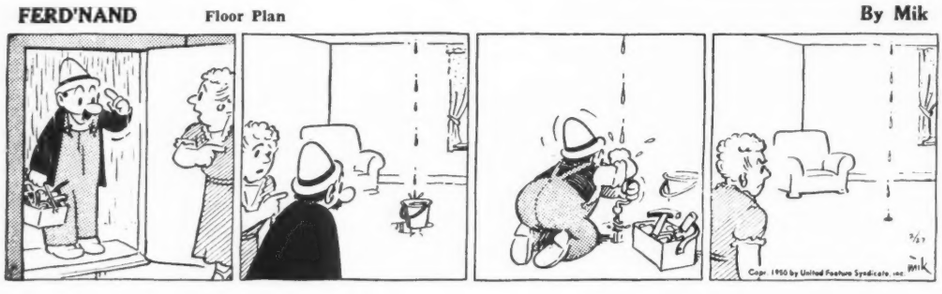
Everyday Dull Halftone Black is one of eleven fine Everyday blacks. And outstanding craftsmanship, like that which produced "Healy's Sitters," demands exactly the right ink. That's why wise commercial printers stock a good variety of Everyday blacks. Then they're ready for any job with the black best suited to it.

Here are three good things to do: 1. Place a trial order today for Everyday blacks and colors; 2. Write to IPI for free color card showing Everyday's complete selection of 25 colors; 3. When in Richmond, visit the Virginia Museum of Fine Arts—see the work of George Healy, one of America's greatest 19th century portrait artists.

"GEMTONE INKS JUST WON'T CRYSTALLIZE" "GIVE SNAP AND SPARKLE," SAY PRINTERS

"Your Gemtone Process Inks are wonderful! They just won't crystallize," says one printer (name on request) who waited *six months* after printing the first two colors of a job to add the other two. He proved that Gemtone Inks still trap perfectly even after long periods! "Gemtone Inks sparkle," says every printer who uses them. Gemtone Inks give sparkling, lustrous color results every time because they're made to dry on *top* of the sheet. They dry fast, without heat, on sheet-fed presses. And printers tell us they get better mileage with Gemtone Inks since they stay on top of the sheet where they belong.

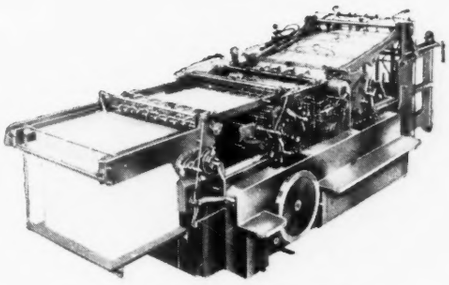
Compare the new IPI Gemtone Process Inks with conventional inks and you will buy Gemtone. Send today for the free Gemtone Comparison folder. Ask your IPI salesman or write us at IPI Headquarters, 67 West 44th St., New York 18, New York.



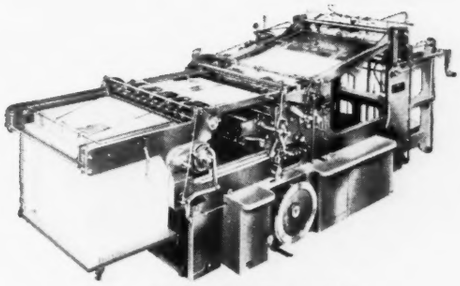
The Miller Family

Six Presses Built For Pressmen

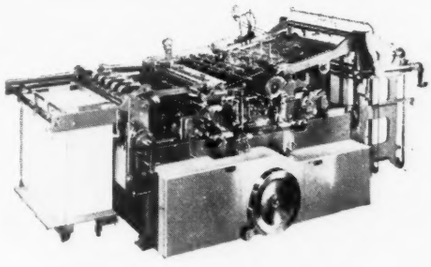
"If you can operate one Miller, you can operate any one of them"



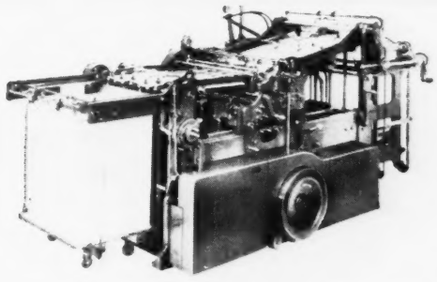
Miller 27 x 41 TY Two-Color
New—1950—net weight 27,600 lbs.
3750 sheets per hour—floor space 23'4" x 10'11"



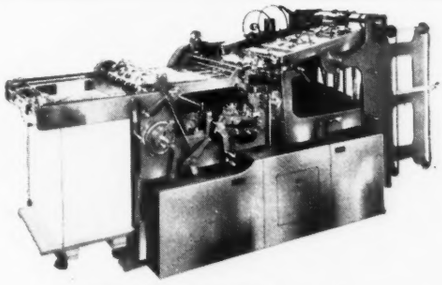
Miller 27 x 41 SY Single Color
New—1950—net weight 19,700 lbs.
4250 sheets per hour—floor space 18'2" x 10'6"



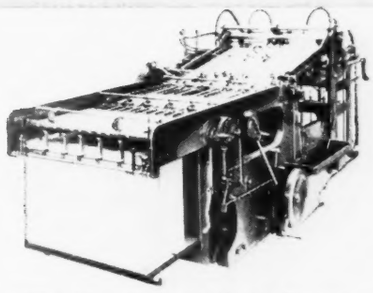
Miller 21 x 28 TW Two-Color
Introduced—1948—net weight 15,650 lbs.
4000 sheets per hour—floor space 17'6" x 7'10"



Miller 21 x 28 SW Single Color
Introduced—1949—net weight 12,100 lbs.
5000 sheets per hour—floor space 13'9" x 7'6"



Miller 19 x 25 SG Automatic
Introduced—1950—net weight 8,050 lbs.
5000 sheets per hour—floor space 11'10" x 6'10"



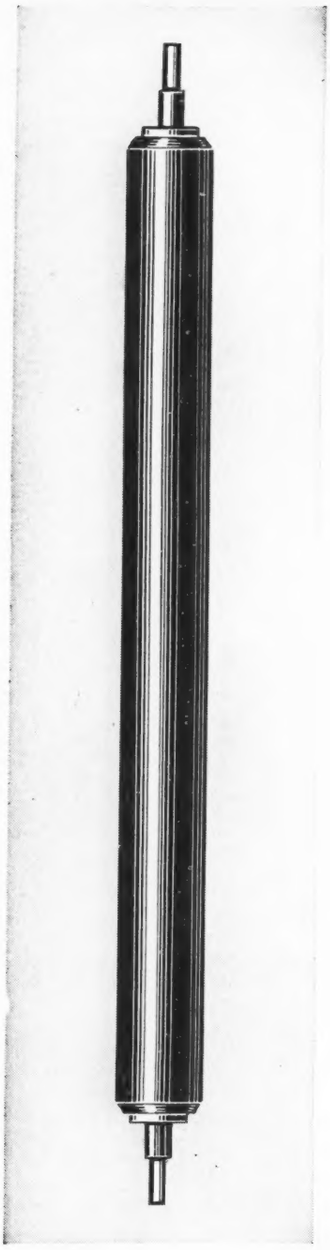
Miller 28 x 41 CY Cutter & Creaser
New—1951—net weight 19,300 lbs.
4250 sheets per hour—floor space 21'9" x 10'6"

miller

MILLER PRINTING MACHINERY CO.
1103 REEDSDALE STREET • PITTSBURGH 33, PA.

OVER ONE HUNDRED YEARS OF ROLLER MAKING

SAM'L BINGHAM'S SON MFG. CO.



Manufacturers of

RUBBER • NON-MELTABLE • FABRIC COVERED
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ROLLERS

WE ARE NOW MAKING
COMPOSITION ROLLERS
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WINTER USE

SHIP YOUR OLD ROLLERS TO
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CLEVELAND 14
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PRINTING EQUIPMENT *Engineer*

AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

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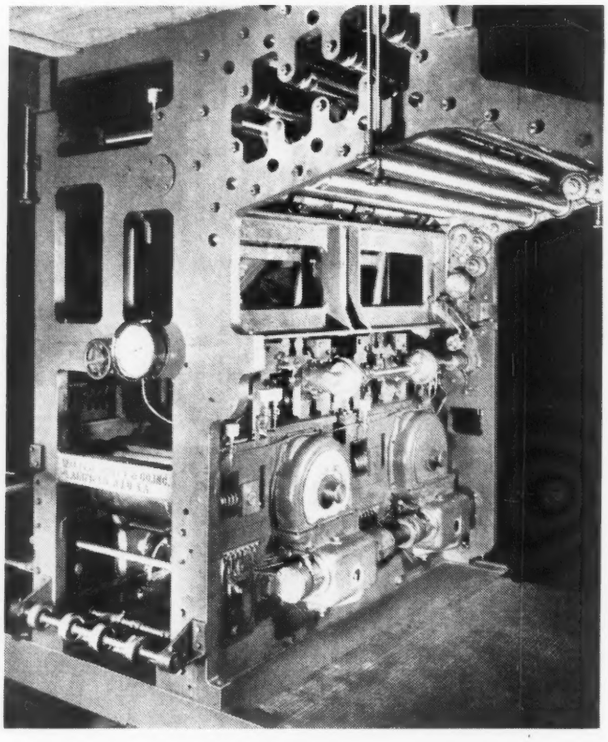
THE SCOTT FOLDER

The Finest . . . Fastest . . . Greatest Capacity Folder Built!



Can YOUR Folder handle 96 full size pages at 40,000 per hour speed? Such speed may not be required often, but with a SCOTT 3 to 2 ratio Folder you would be more secure in your pressroom.

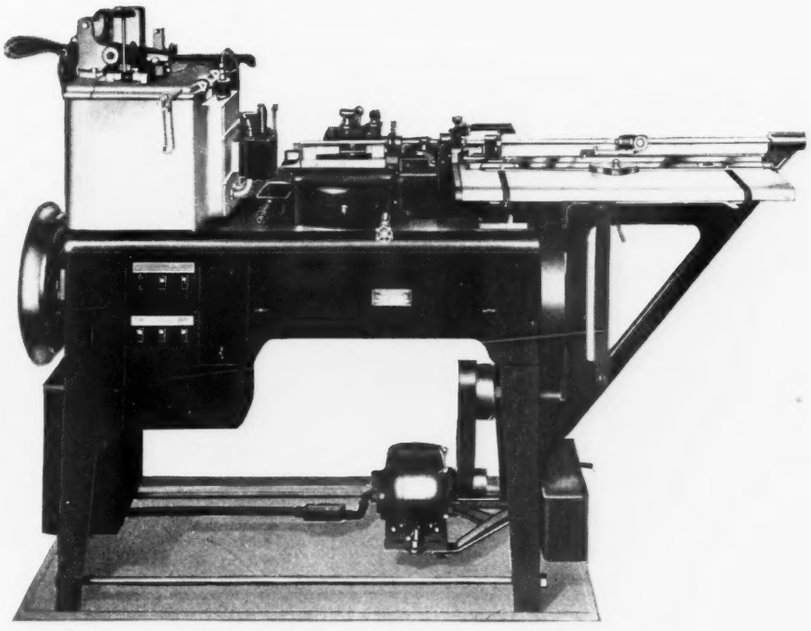
Let us show you a* SCOTT *in action!

WALTER SCOTT & CO., INC.

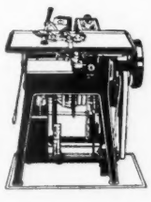
PLAINFIELD, N. J.

The Elrod

Let the Elrod help to increase your production of strip material. Assure your compositors an ample supply of leads, slugs, rules and base material for mounting cuts, shell casts and electros. The Elrod supplies strip material from 1-point to 36-points in thickness—a wide range of product from a single machine. Elrod material is formed in the mold as a continuous strip of metal, cooled and solidified under pressure.



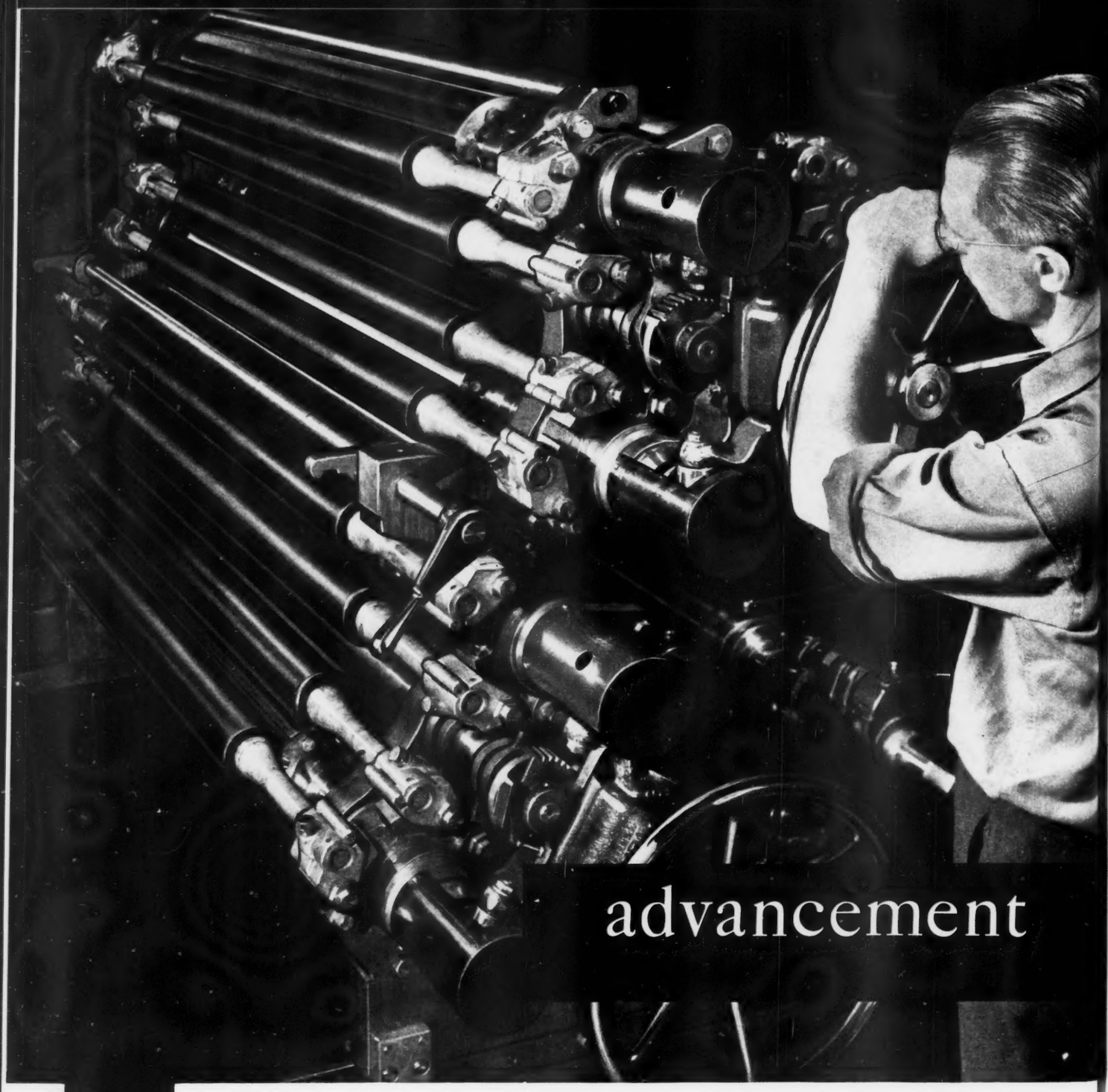
Simple in design and mechanism, the Elrod is a dependable machine, with minimum upkeep costs. It consistently produces a constant supply of material that meets today's exacting printing requirements. The fact that so many printing and publishing plants use only the Elrod for their strip material evidences entire satisfaction with its operation.



The Ludlow All-Slug System
is the most direct method of producing
job, display and ruleform composition

Ludlow Typograph Company 2032 Clybourn Avenue, Chicago 14, Illinois

Set in members of the Ludlow Tempo family



advancement

ADVANCEMENT IN DESIGN of Cottrell equipment includes such developments as the Cottrell washup device which makes press washup a two-minute job per color. Also, with one turn of a handwheel, the pressman automatically throws covered rolls off contact with inkers throughout each distribution, after washup, to preserve the accuracy of the rolls.

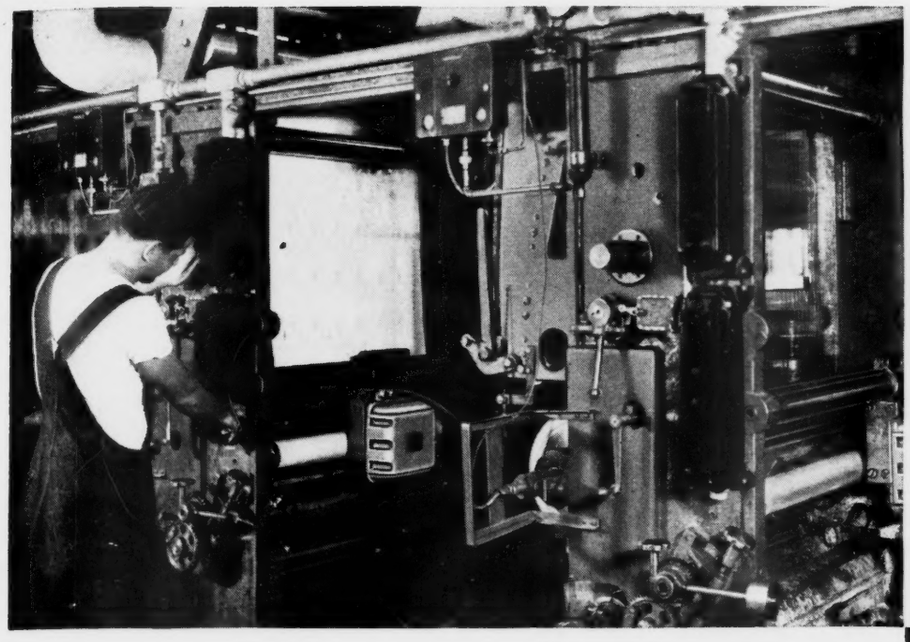
These are reasons why printers equipped with Cottrell presses not only produce letterpress printing of the highest quality, but enjoy the profits that come from getting more work done in less time with fewer press units.

Cottrell's advanced refinements are made possible by almost a hundred years of close association with pressroom problems. Let us tell you in detail how Cottrell multicolor rotary presses can contribute to the efficiency of your business.

C. B. COTTRELL & SONS COMPANY

Westerly, Rhode Island

Claybourn Division: Milwaukee, Wisconsin • Sales Offices: New York, Chicago, London



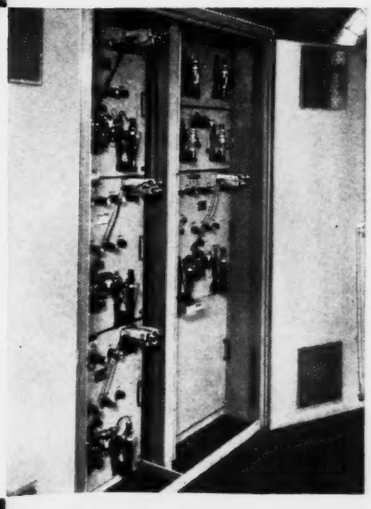
Holds hairline register on cellophane

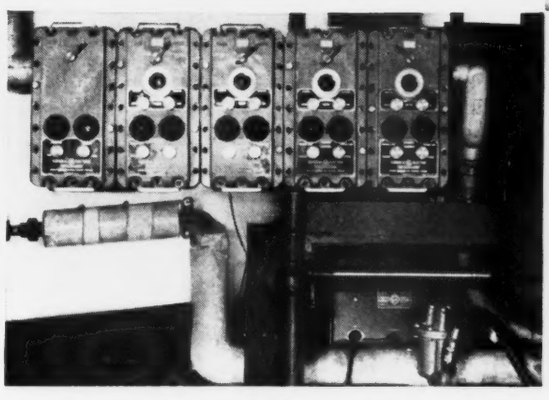
At Milprint, Inc., in Milwaukee, which prints multicolor wrappers on a continuous roll for use by food packers, G-E color-register control has permitted a substantial increase in press speeds. Close register is held on this rotogravure press even on such difficult materials as cellophane, pliofilm, and cellulose acetate. As a result, this company calculates the savings in rejects will more than pay for the G-E equipment within a year.

Milprint, Inc., says:

COLOR REGISTER CONTROL

WILL PAY FOR ITSELF IN ONE YEAR





Less Maintenance

Explosion-proof design of all press-mounted equipment such as these unit control stations at Milprint, sturdy construction of all components, and circuits designed for industrial use reduce and simplify maintenance. All-electronic system minimizes number of parts which can come out of adjustment.

Less Waste

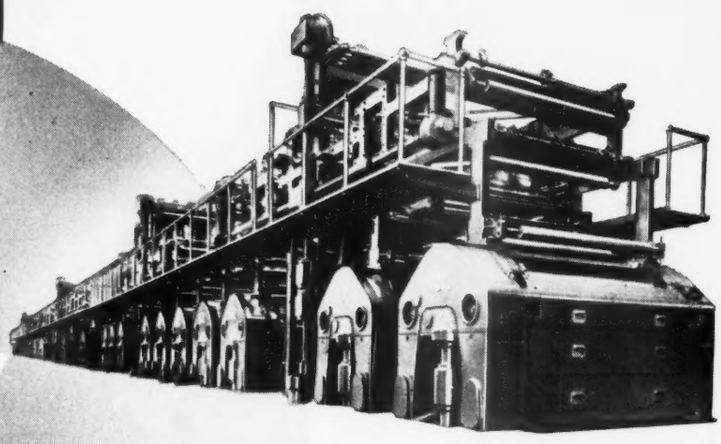
Waste is reduced and printing quality improved through accurate register because this all-electronic control provides a rate of correction that is proportional to the amount of misregister and is sensitive instantaneously to any error . . . no time is lost in magnetic relays picking up and solenoids operating.

Investigate Today! **For full information and details on this outstanding equipment, contact the printing specialist in your nearest G-E apparatus sales office or write now for bulletin GEA-5079 "G-E Register Control for Multicolor Printing."** ***Apparatus Department, Section 653-2, General Electric Company, Schenectady 5, N. Y.***

GENERAL ELECTRIC

653-2

393 already installed



...IS FOUR-YEAR RECORD OF

Hoe Color-Convertible Press

HOE COLOR-CONVERTIBLE NEWSPAPER PRESSES comprising a total of 393 printing units have been installed by leading newspapers throughout the Americas, since the first press of this model was placed in operation in 1947. Many more are on order and under construction for early delivery.

The Color-Convertible Press is being selected by so many newspapers because of its all-around outstanding performance—made possible by the efficiency of Hoe design, precision construction with the finest quality of materials, and the many special features Hoe has developed to meet the requirements of modern newspaper production.

One-motion ink control, ease of web-threading, instantaneous plate lock-up, selective main folder drive, fold equalizing adjustments, automatic running belt tension, full speed web-splicing—are some of the many advantages that contribute to its high-speed, high-quality performance.

And finally, the Color-Convertible Press offers an unrivaled adaptability to R.O.P. color facilities to meet the steadily increasing demands for more and more color in the daily newspaper.

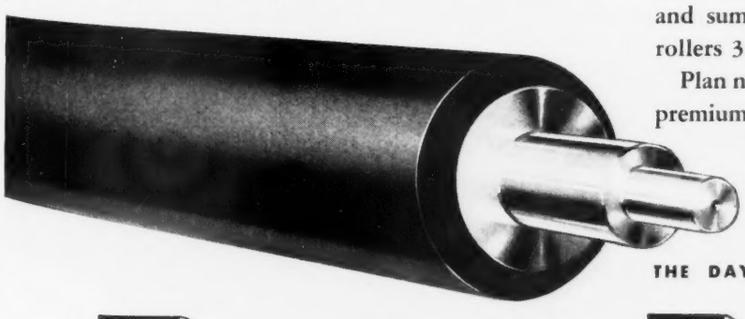
R. HOE & CO., INC.

910 East 138th Street New York 54, N. Y.

BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO
BIRMINGHAM • PORTLAND, ORE.

Now Dayco Newspaper Rollers give you deep, true, live colors, fast as the news, on your high-speed presses.

Daycos can be used for color or black and white, in any position. They handle all types of ink; are unaffected by fast-drying "special" inks, washup solutions, oils, acids, moisture. Their diameter, shape and softness are unaffected by press speeds or climatic conditions—remain accurate to 1/1000 of an inch. Use the same rollers winter and summer, without change. Daycos outlast ordinary rollers 3 or 4 times.



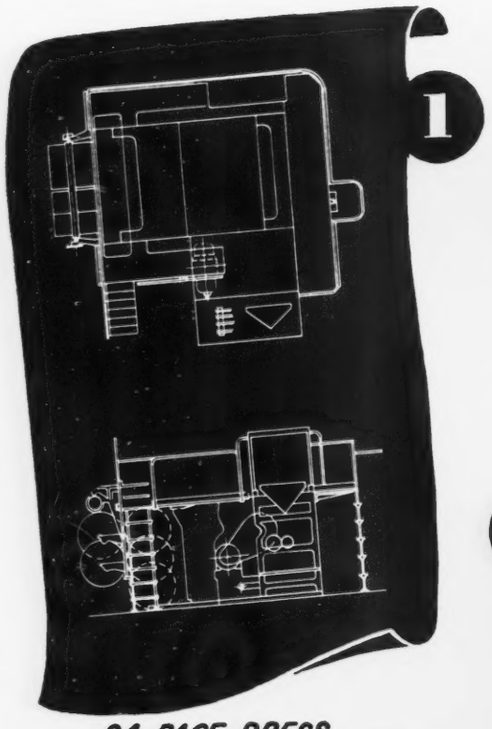
Plan now to increase advertising revenue, earn the color premium, with the quality reproduction that Daycos will give you in all press positions! For more news of the new Daycos and what they can do for you, write:

THE DAYTON RUBBER COMPANY, DAYTON 1, OHIO

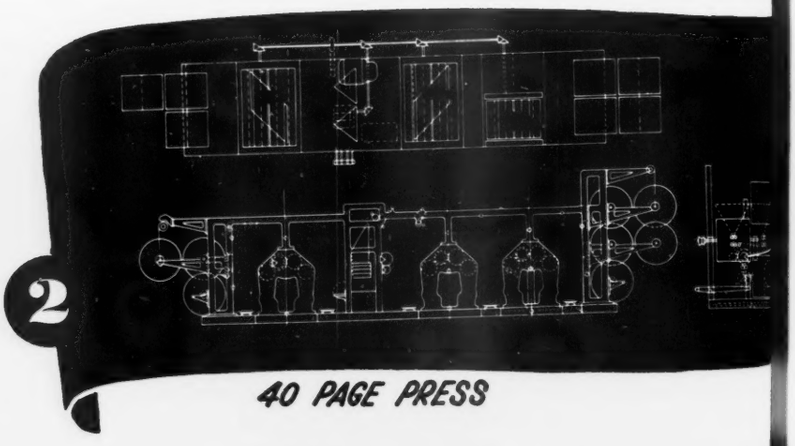
Dayton Rubber

Pioneers of Improvements for Better Printing

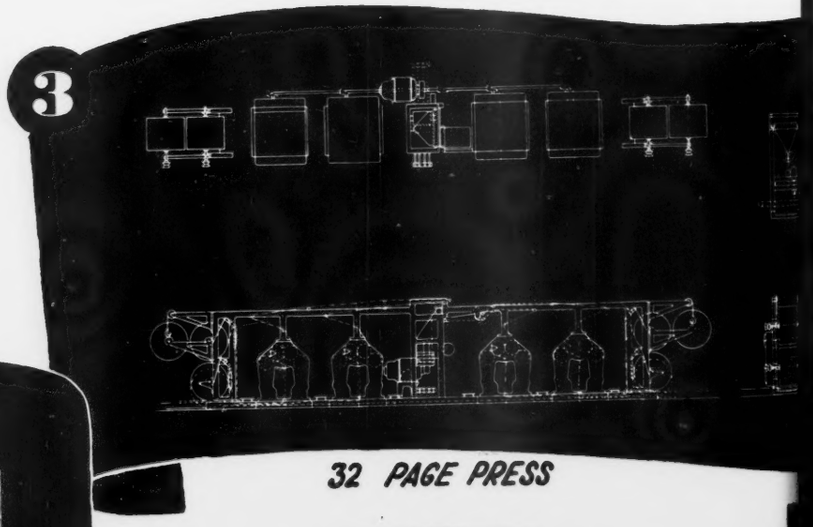
7 typical ways to arrang



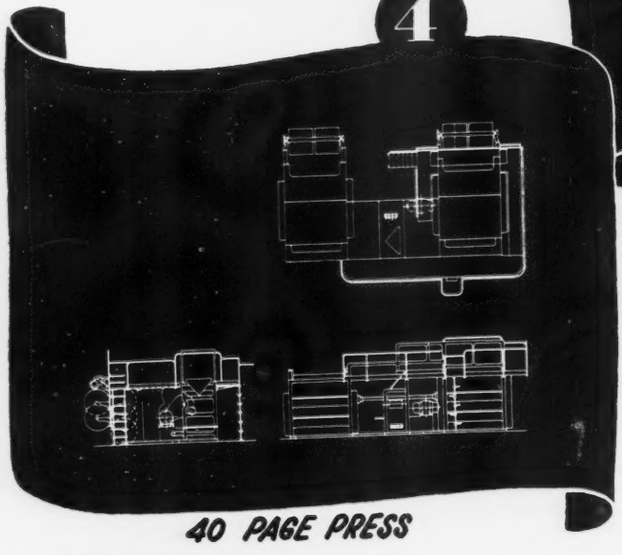
24 PAGE PRESS



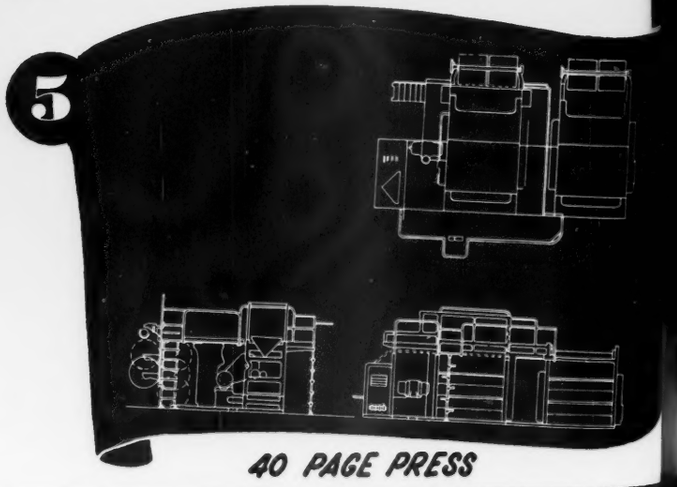
40 PAGE PRESS



32 PAGE PRESS



40 PAGE PRESS



40 PAGE PRESS

IF IT'S Wood IT'S GOOD

...your Cosmopolitan Press

There's a new Cosmopolitan Press with all its "big city" advantages for your plant and it can be arranged to meet your particular needs and space requirements.

Whether you prefer the straight-line or double-deck silhouette; whether you need 2 sixteen-page press units or 4 eight-page press units – you can be sure there is a Cosmopolitan Press to fit your present set-up.

No matter what shape your Cosmopolitan Press takes it is still the only smaller-city newspaper press with all 3 "Big City" advantages . . .

1. "Big City" Economy

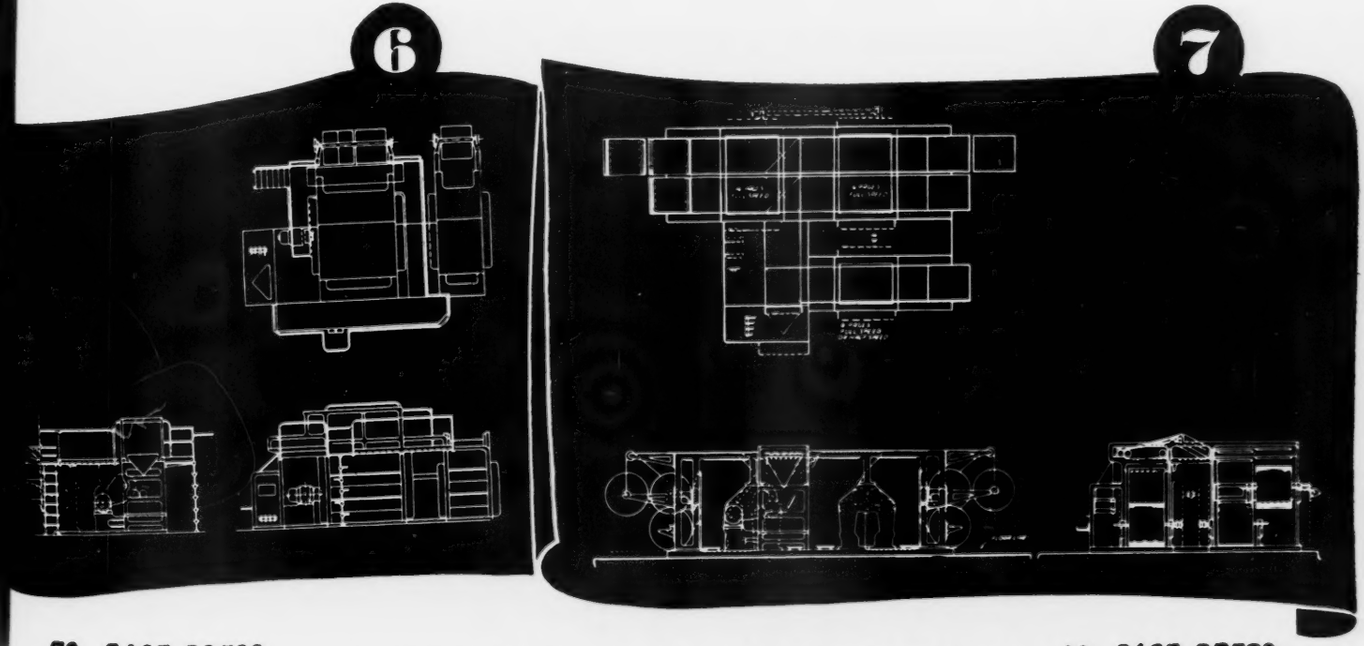
The Cosmopolitan Press is standard from paper-roll to delivery. Its feed, press units and folder are installed with no pit or undertrench. They are completely accessible for quick adjustment and economical maintenance. The Cosmopolitan's short paper-roll spindles reduce the paper-roll widths to two sizes — one-page and two-page widths. Electric hoists and automatic tensions are supplied.

2. "Big City" Printing Methods

The use of semi-cylindrical printing plates is combined with "Big City" Economy to ensure a better-looking newspaper, produced at a lower cost.

3. "Big City" Flexibility

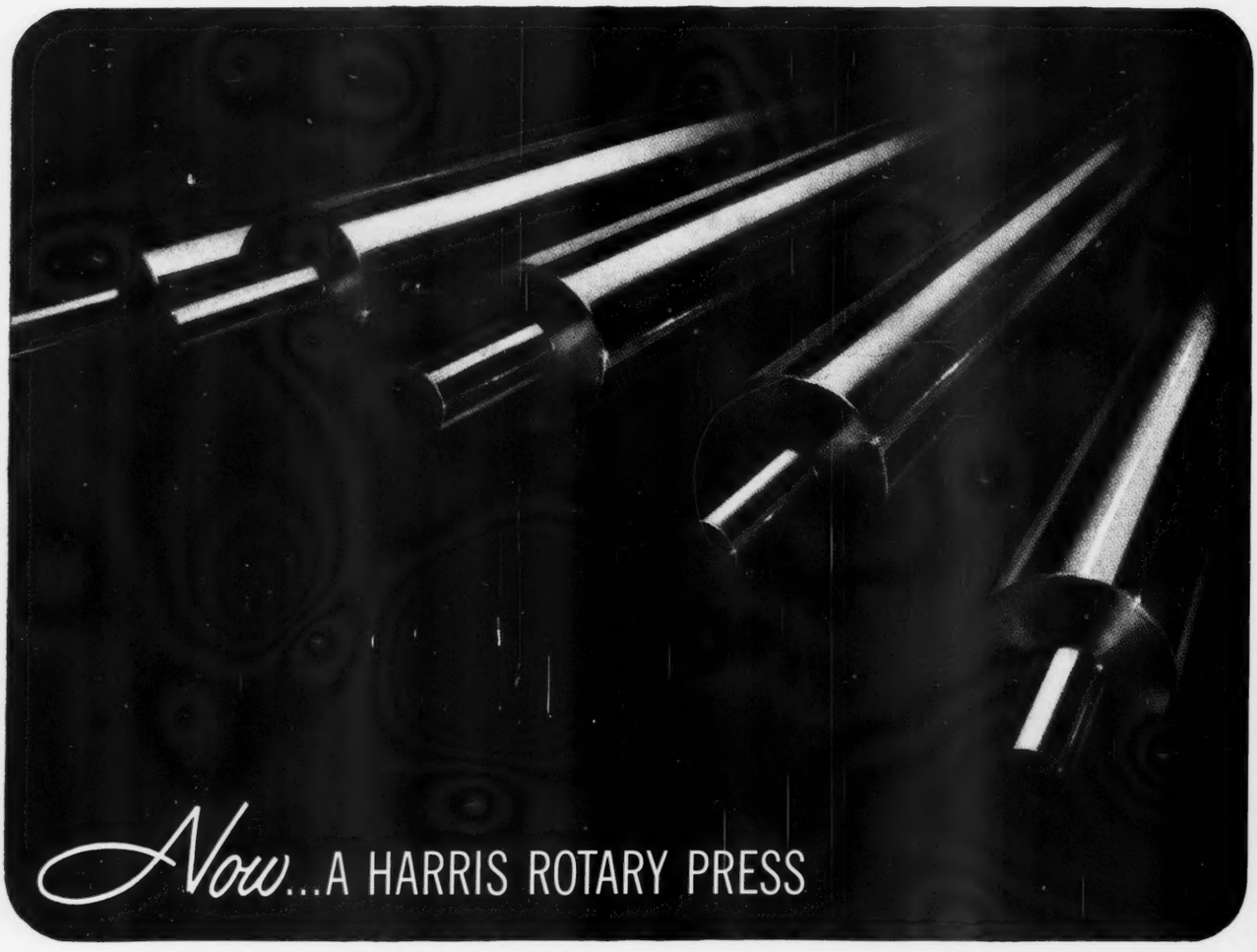
The patented INTRASERTOR — an integral part of every Cosmopolitan Press — permits 2-page jumps on collect runs in a standard-sized newspaper or 4-page jumps in a newspaper of tabloid size. The color "flexibility" feature provides for from one to four colors in every edition, if desired.



32 PAGE PRESS ***WRITE FOR FULL INFORMATION*** *40 PAGE PRESS*

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17



with 5 FORM ROLLERS *for unequalled ink coverage*

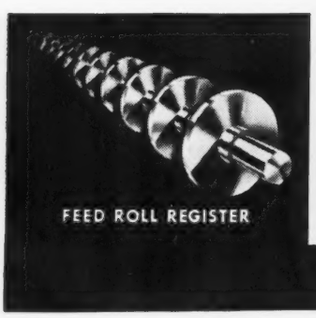
Every printer knows that the number of form rollers is the important factor in ink coverage. Here's a press with 5!

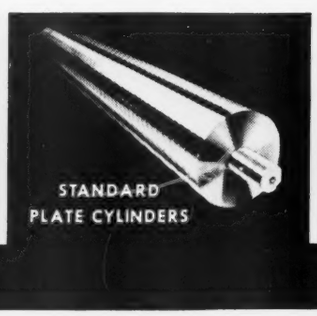
Five form rollers on the new, Harris two-color 45 x 65″ letterpress assure smooth, even coverage on the most difficult solid designs. It is just one of the many ways in which Harris has designed a rotary press for label, quality publication and carton printers.

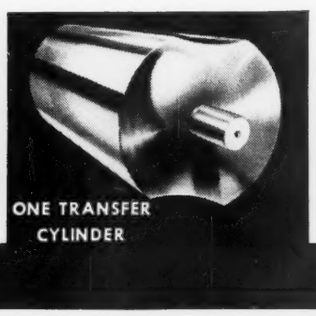
For instance, a *single cylinder* between units, with the transfer grippers making only one grip and one release, protects register and prevents damage to sheets. *Standard plate cylinders* on this press take plates from existing precision platemaking equipment. The *double-delivery* system gives twice as much drying time for finished sheets. It allows the piles to be unloaded without stopping the press. Harris stream feed and *feed-roll* system give positive control of front register without damage to the sheet.

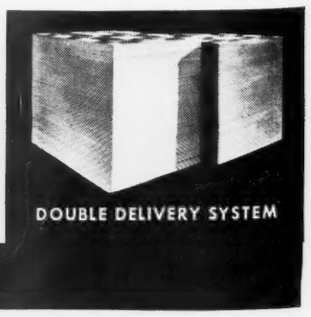
Quality printing can be made more profitable. May we discuss this with you?

HARRIS-SEYBOLD COMPANY GENERAL OFFICES, CLEVELAND 5, OHIO









How to keep a color press in the pink

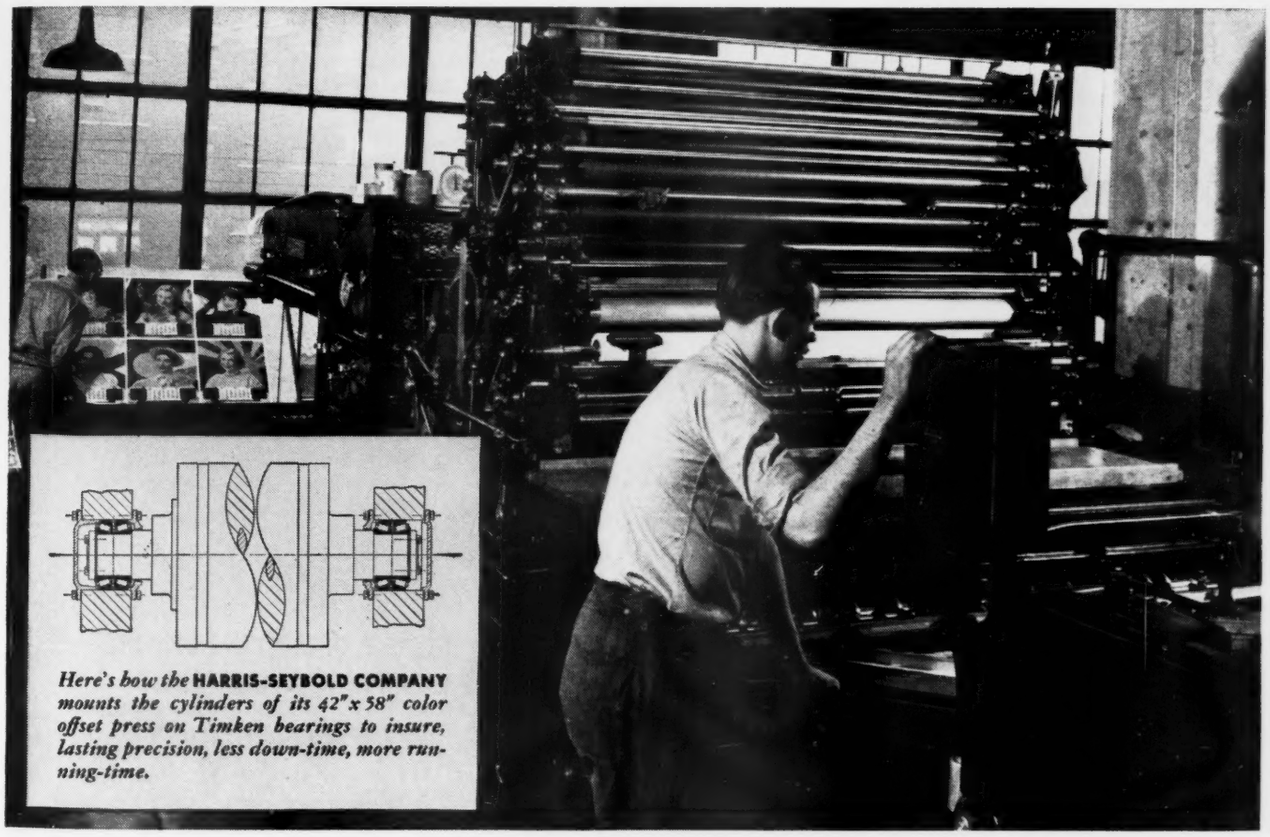
TO keep their 42″ x 58″ single color offset press in top shape, turning out consistently high quality lithography, the Harris-Seybold Co. has mounted the vital cylinder shafts and main drive shaft on Timken® tapered roller bearings. Timken bearings on the impression cylinder, plate cylinder, delivery cylinder, advance and feed cylinder, blanket cylinder and main drive shaft insure lasting precision, prevent costly delays for maintenance and lubrication.

Timken bearings eliminate all speed restrictions due to bearings, permitting more impressions per hour. Cylinders are kept in rigid, positive alignment. End-movement and deflection are minimized, permitting minute pressure adjustments. Extreme precision is maintained.

The true rolling motion and smooth surface finish of Timken bearings practically eliminate friction. Line contact between rollers and races gives extra load-carrying capacity. And tapered construction enables Timken bearings to carry any combination of radial and thrust loads without end-movement or deflection.

No other bearings can give you *all* the advantages of Timken bearings. Wherever bearing precision and long, trouble-free service are important, make sure the trademark "Timken" is on the bearings of the machines you build or buy. Timken bearings are backed by 50 years of bearing research and development and are first choice throughout industry. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



Here's how the **HARRIS-SEYBOLD COMPANY** *mounts the cylinders of its 42″ x 58″ color offset press on Timken bearings to insure, lasting precision, less down-time, more running-time.*

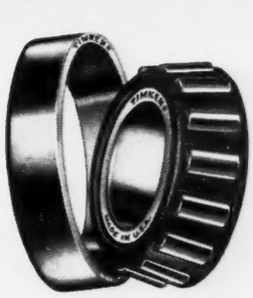
NEW ENGINEERING JOURNAL!

529 PAGES! Includes new, technical information on bearing applications available nowhere else. Especially helpful to design engineers. Gives bearing dimensions, capacities, selection and mounting data. For a copy, write on your company letterhead to The Timken Roller Bearing Company, Canton 6, Ohio.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ↕ AND THRUST →◎← LOADS OR ANY COMBINATION ✳

SHEET-FED PRINTERS!

any job completed

ON ONE PRESS - IN ONE RUN

MULTIPLE OPERATIONS ON ONE ROLL-FED NEW ERA PRESS!

Yes . . . one basic New Era press, with optional auxiliary units, will—in one straight-line continuous press run—deliver 7500 multi-color impressions per hour. It prints multiple colors on one or both sides of the web, while performing other operations in one continuous press run. It will punch, die-cut, slit, insert, reinforce, patch and eyelet as well as perforate and number across or along the web.

First and foremost in multi-process roll-fed presses for over 50 years, the New Era is a precision flat bed web press that prints from type, engravings, electros, rubber or plastic plates. It takes almost any roll stock, from onion skin to .050 board and delivers the finished product in sheets, rewound or zig-zag folds.

It is superbly engineered and ruggedly built. Register and other adjustments and controls are handled with finger-tip ease by one operator. The New Era press will save you time and labor and put you a big jump ahead of competition.

Investigate the advantages of roll-fed multi-process printing on *one* New Era press assembly. Write today for complete facts and specifications in Bulletin #11.

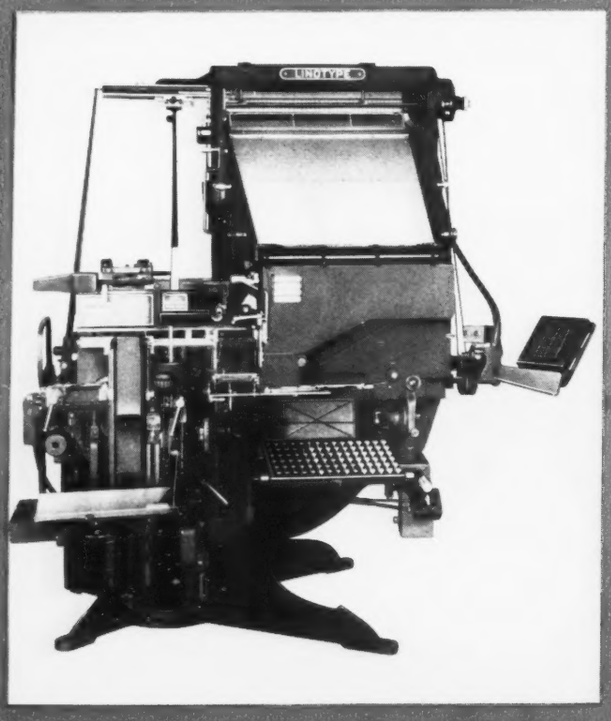
NEW ERA

MANUFACTURING CO.
374 Eleventh Avenue
PATERSON, NEW JERSEY

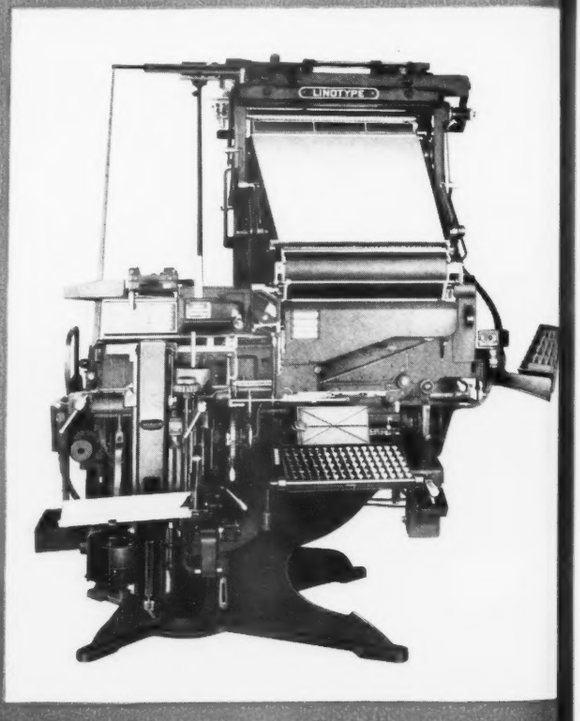
"Here they are! Today's **WRL's**"

FOR COMPOSING BOTH TEXT AND DISPLAY MATTER WITH EQUAL EASE AND ECONOMY!

MEET THE SIMPLIFIED WIDE RANGE LINOTYPES— MODELS 33, 34, 35 AND 36!

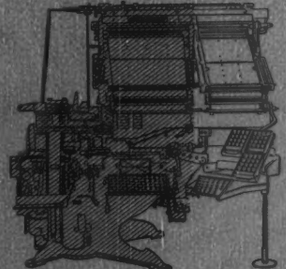


THE BLUE STREAK MODEL 33—With one to four wide 90-channel magazines, this versatile Single-Distributor Linotype permits keyboarding type faces through normal 24 point, or larger in condensed sizes. This capacity is increased to normal 36-point faces and the largest condensed faces when wide 72-channel magazines are used.



THE BLUE STREAK MODEL 35—This Mixer L type is available with two or four wide 90-channel magaz or combinations of wide 72- and wide 90-channel magazi In addition to mixing matrices from adjacent magazines, machine will accommodate faces through normal 36 poi or larger condensed sizes.

THE MODEL 34 has same main-magazine capacity as the Model 33 but also accommodates one to four wide auxiliary magazines.



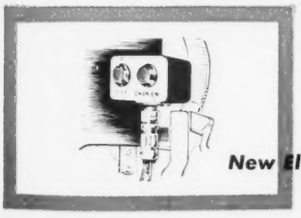
THE MODEL 36 similar to the Model 35, has the additional capa for two or four wide 34-c nel auxiliary magazines.

NEWLY ENGINEERED TO SPEED PRODUCTION AND SLASH MAINTENANCE COSTS!

Compose TEXT or DISPLAY Faces with Equal Ease and Economy!

Tested, proven and acclaimed by printers and publishers for years, Wide Range Linotypes have now been newly engineered to help speed production of text and display faces, to make operation easier, and to minimize maintenance. They offer you the extra versatility and production economy that often mean the difference between profit and loss on close-margin jobs. Extra-wide main magazines accommodate small text faces or giant display faces – making these machines the answer to the most stringent composing-room requirements. Progressive newspaper plants meet deadlines and cut costs by routing advertising display, heads and text copy to their Wide Range Linotypes, while many job and commercial shops have found that a single Wide Range Linotype fills all their needs for text and display composition.

WIDE RANGE LINOTYPE FEATURES

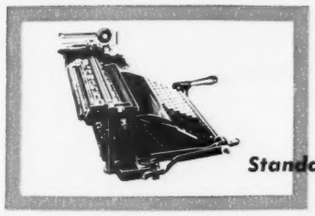


New Electromatic Safety System

To guard against machine or matrix damage, the new Electromatic Safety System prevents shifting of magazines until all matrices have been safely distributed. As long as a single matrix remains in the distributor box – or on the distributor bar – an automatic safety latch locks the magazine elevating mechanism. Channel entrance partitions are protected, too – the new hinged upper and lower plates on the channel entrances operate a special circuit of the Electromatic Safety System which locks magazines if matrices remain in the channel entrances. Two indicator lights show green when the magazines are ready for shifting, thereby saving time for the operator. The action of the Electromatic Safety System is instant and positive. When magazines will shift – it's safe to shift them.

IMPROVED MAGAZINE ELEVATING MECHANISM

Solidly anchored to the machine base, a new magazine elevating mechanism makes shifting easier than ever. Thoroughly tested for easy operation under all conditions, this Linotype improvement also simplifies maintenance. There are no adjustments to continually check – no motors or complicated mechanisms to service.

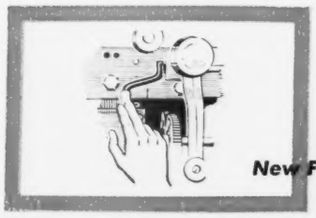


Standard Swing-Out Keyboards

Greatly simplified, the new Wide Range Models now use the same keyboards found on all other Linotypes. In only eight seconds, these keyboards swing out for easy inspection, cleaning or servicing. All parts become immediately accessible. Cams lift out without tools. Each rubber roll is released by loosening a single screw. The key bars come free as a unit. The entire keyboard may be serviced while on the machine – there's no need to remove it to a bench.

NEW SWINGING KEYBOARD ROD FRAME

On Wide Range Linotypes equipped with both 72- and 90-channel wide magazines, the pivoting action of this frame brings the proper set of keyboard rods into operating position when the operator shifts the new mixing control. There is no intermediate selector mechanism between the keyboard and the keyrods – action is direct – maintenance is simpler.

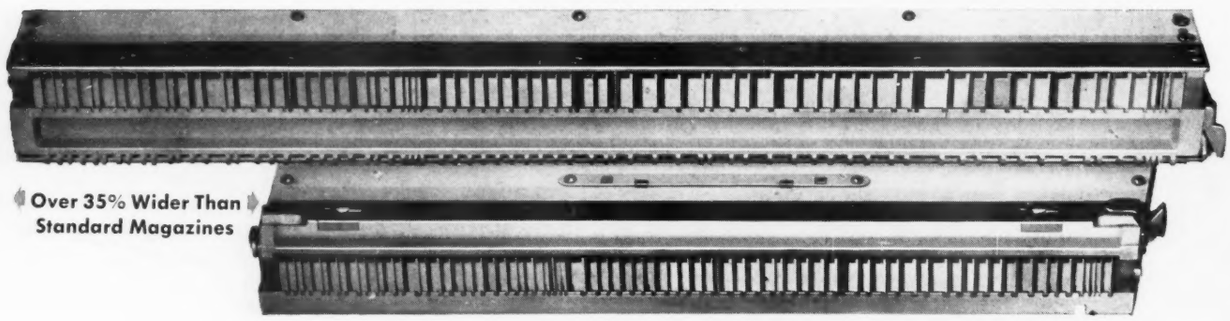


New Feather-Touch Mixing Control

For mixing matrices from adjacent magazines on Wide Range Mixer Models 35 and 36, a simplified operating mechanism transfers keyboard action from one magazine to the other at the touch of a convenient lever. Carefully counterbalanced to provide fast, easy selection of type faces, this new mixing device is simplicity itself. Its sturdy, manually-operated mechanism is so well engineered that it functions with the same smoothness and speed as a power-driven unit.

Ask Your Linotype Production Engineer For More Details!

wider magazines mean wide-range profits!



The extra-wide main magazines on all Wide Range Linotypes permit larger display faces to be keyboarded with the same ease and economy as the smallest text faces. Here are a few examples that show the large variety of type sizes instantly available on Wide Range Linotypes.

FACE RANGE OF WIDE 90-CHANNEL MAGAZINES

6 point Bell Gothic
Text and display sizes keyboarded with equal ease and economy on

8 point Times Roman
Text and display sizes keyboarded with equal ea

10 point Caledonia
Text and display sizes keyboarded with eq

12 point Baskerville
Text and display sizes keyboarded wi

14 point Garamond Bold No. 3
Text and display sizes keyboarded

18 point Bodoni Bold
Text and display sizes ke

24 point Spartan Heavy
Text and display siz

28 point Erbar Bold Condensed
Text and display sizes k

36 point Poster Bodoni Compressed
Text and display size

ADDITIONAL CAPACITY OF WIDE 72-CHANNEL MAGAZINES

30 point Memphis Bold
Text and displ

36 point Caledonia Bold
Text and disp

42 point Erbar Medium Condensed
Text and display s

48 point Erbar Bold Condensed
Text and disp

AND WITH WIDE 34-CHANNEL AUXILIARY MAGAZINES

WIDE RANGE LINOTYPES SET

60 POINT

DISPLAY FACES!

Set in members of the Corona, Spartan and Memphis Families, and in indicated faces

• LINOTYPE •

MERGENTHALER LINOTYPE COMPANY
29 Ryerson Street, Brooklyn 5, New York

Metallurgy

Craftsmanship

Tolerance Control

8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

Integrity

Product Uniformity

Field Service

Engineering Service

Surface Finish

make **preference for a reason** your guide when you specify ball and roller bearings

Over the years, products acquire a value above and beyond their mechanical qualities—a value proved by their *acceptance* throughout industry. This is especially true of SKF ball and roller bearings, preferred by all industry for one or more of eight good reasons. So when you specify, let preference be your guide. 7200

SKF
BALL AND ROLLER BEARINGS

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of SKF *and* HESS-BRIGHT *bearings.*

Genuine ROCKET ROLLERS *Are better than ever!*

They were excellent rollers before, but now that we've revised them as suggested by you who use them—they're better than ever!

More than a year's experience in pressrooms all over the country has resulted in ROCKET ROLLERS which meet even more of your exacting requirements.

Read what these pioneer users of ROCKET ROLLERS have to say!

RECOGNIZED EVERYWHERE AMONG LEADING PRINTERS

"Find ROCKET ROLLERS highly satisfactory on all types of presswork. Have used them exclusively on run-of-the-mill work and they stand up under all conditions. Especially good on color work and I switch from black to colors without washup difficulties experienced on other rollers and without black working out into the colors we use."
—*Redfield, South Dakota*

"Have used my Craftsman 12 x 18 ROCKETS for 14 months and the surface is still in excellent condition."
—*St. Louis, Missouri*

"I found my ROCKET ROLLERS to be very good. Shop is in a basement and I was troubled with dampness. ROCKETS performed O.K."
—*Wooddale, Illinois*

"Have had my Ideal ROCKET ROLLERS about a year now. Have used them on all kinds of jobs including perforators locked up in forms. Where the rollers I had been using are usually ruined after this length of time, examination of my ROCKETS shows that they are as good as when I purchased them. They are softer, yet tougher, than any I have ever used. If I ever need to replace them I'll want another set just like them."
—*Cambridge, Idaho*

NOTE THESE ECONOMICAL PRICES

No Cores to Buy—No Packing or Transportation Costs!

ALL PRICES PREPAID

8 x 12 Gordon ROCKETS	@	$3.20 each
10 x 15 Gordon ROCKETS	@	$3.85 each
10 x 15 Kluge ROCKETS	@	$4.40 each
10 x 15 Craftsman ROCKETS	@	$4.15 each
12 x 18 Gordon ROCKETS	@	$4.40 each
12 x 18 Kluge ROCKETS	@	$4.95 each
12 x 18 Craftsman ROCKETS	@	$4.70 each
Miehle Vertical (plain core*) ROCKETS	@	$4.70 each

*Grooved for Oilite Boxes
West of Rockies add 30c per roller

If you have no charge account, send two credit references with your order.

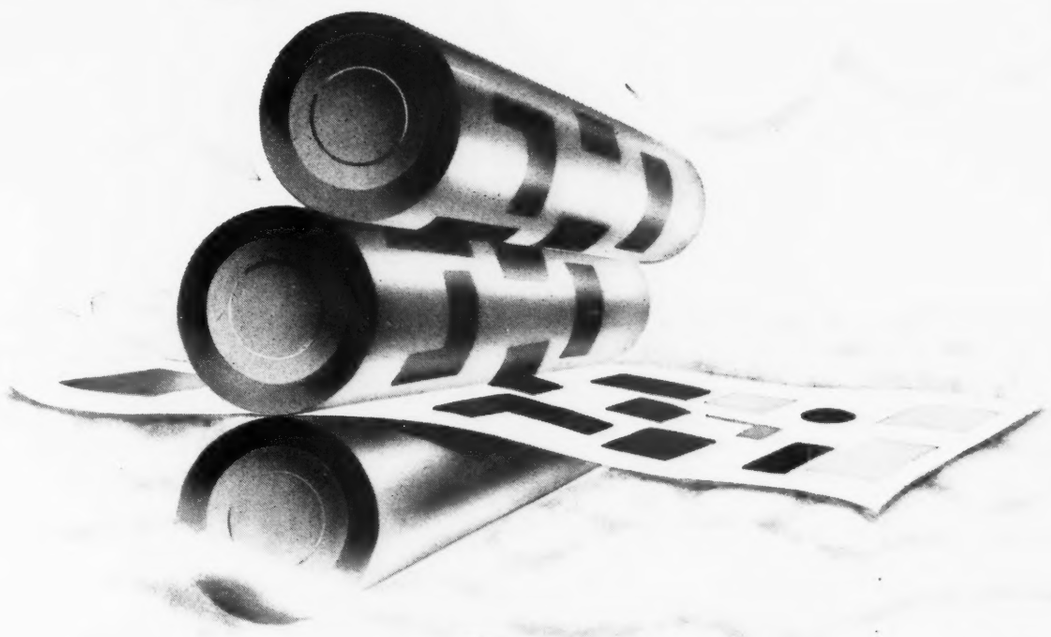
Prices include cores, Sorry, no C. O. D.'s

SEND YOUR ORDER NOW FOR A SET OF IDEAL ROCKET ROLLERS TO PROTECT YOU AGAINST POSSIBLE SHORTAGES AHEAD.

IDEAL ROLLER & MANUFACTURING CO.

Chicago 8, Illinois **Huntington Park, California** **Long Island City 1, N. Y.**

*Floating Impression



Exclusive with MANN OFFSET PRESSES

Floating Impression is one of the features of Mann Presses responsible for their leadership throughout the world. There is no bearer contact, for the cylinders on Mann Presses are not supported on bearers, but in massive journals. A parallel cylinder setting device permits paralleling cylinders and regulating pressure to .001" between blanket and impression cylinders from operating side even while press is running.

This precision control eliminates slippage. It contributes to elimination of streaks, reduces plate wear, saves time in making ready and running, and assures better print quality.

Many other features of Mann Presses likewise contribute to their efficiency and outstanding economy. Among them are: hydrostatic water control; built-in washup device; a superior inking system.

To get all the facts, contact your ATF Representative and learn what a Mann Offset Press can mean to you in increased business and increased profits. Mann one-color presses available in seven sizes from 22"x34" to 42"x65". Two-color presses in six sizes from 25"x36" to 43"x65". And also the only sheet-fed offset perfecting press, taking sheet sizes from 17"x32" to 38"x53½".

* *The cylinder bearers never touch. Impression contact can be adjusted with the utmost precision for a true kiss touch.*

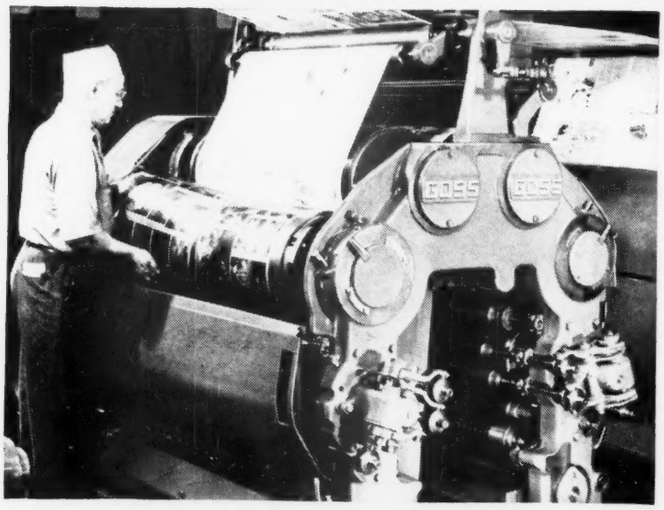
AMERICAN TYPE FOUNDERS ATF

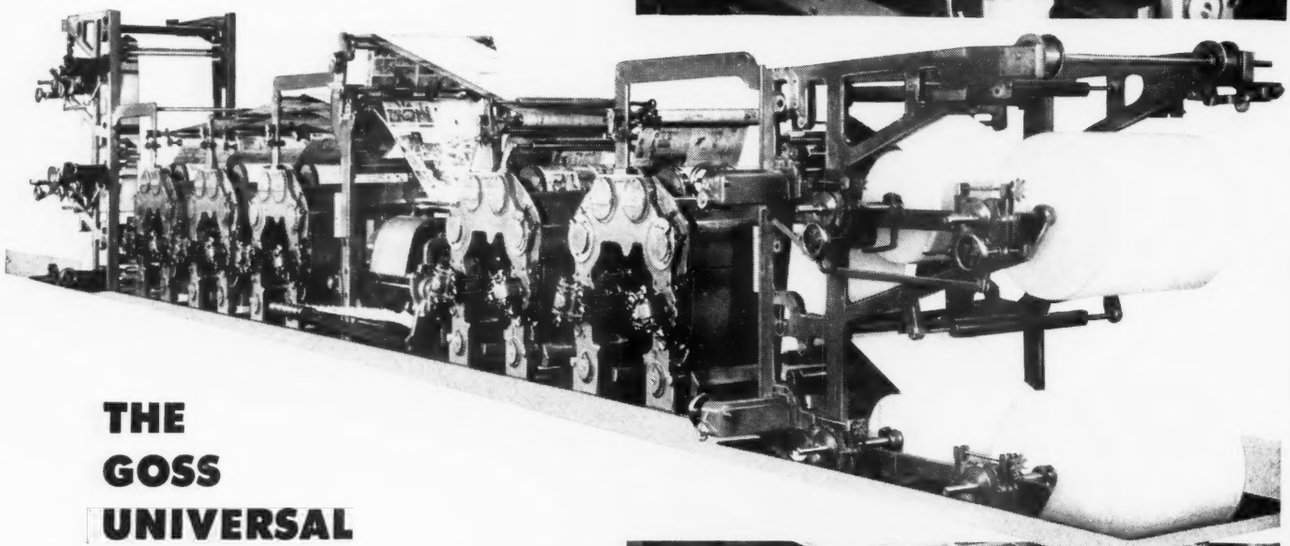
200 Elmora Avenue, Elizabeth B, N. J.

Branches in Principal Cities

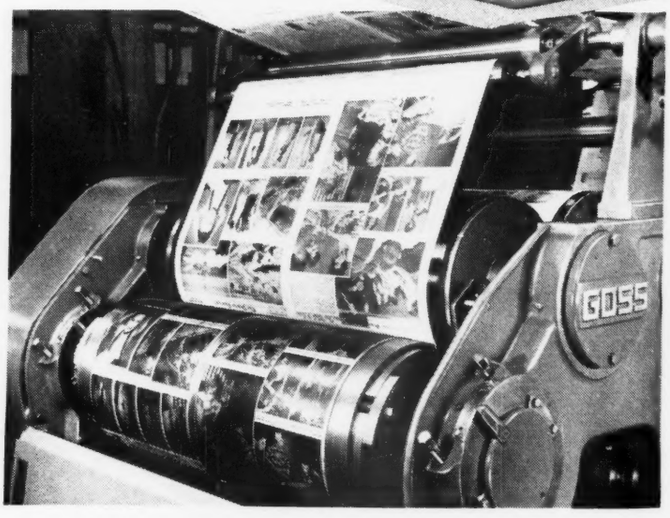
RIGHT

FROM THE BEGINNING





THE GOSS UNIVERSAL PRESS



The value of *Pre-Engineering* was never more apparent than in the Goss Universal Press. This press was designed to fit a definite need for a compact semi-cylindrical rotary to print 36,000-40,000 papers per hour for dailies in the intermediate class. How well the Universal has met the need is attested by the number of orders from well-known publishers.

THE GOSS PRINTING PRESS COMPANY

1535 S. Paulina St., Chicago 8

Duplex Division: Battle Creek, Mich.

Goss Printing Press Co. Ltd., Preston, England

it's **GOSS** *again*

PROVEN PRINCIPLES OF GOSS ENGINEERING . . . *Unit Design*—Single width, two plates wide—permits 4 or 8-page additions to press capacity; provides more accessibility... *Low Ceiling . . . One-Level Operation . . . No Angle Bars... Continuous Feed Ink System*—no fractional rollers . . . *Underneath Paper Feed... Complete Color Flexibility*—removable fountain pans . . . *Folder Delivery Either Side.*

That's what they all say—

"GRAFARCS cut exposure time . . . deliver the constant, even light that gives uniform tone values."

Schultz Lithographing Company

1000 MORSE AVENUE · CHICAGO 26 · AMBASSADOR 2-0000

October 10, 1950

Mr. A. J. Hatch
The Strong Electric Corporation
87 City Park Avenue
Toledo 2, Ohio

Dear Mr. Hatch:

After several months of rigid testing and constant use under full production conditions, we want to take this opportunity to tell you how pleased we are with our Grafarc installation.

We have your 95 Ampere lamp mounted on the Rutherford Photo Composing Machine and use your new 145 Ampere lamp on the vacuum frame. We have cut our exposure about 40% on both pieces of equipment.

The constant, even light gives us uniform tone values on composed plates with plenty of reserve to sharpen up full positives, maintaining relatively short exposures.

By using your special reflector on the small lamp, we cover our entire line of chases up to 28 x 32" evenly.

We make only Schultz Deep Etch Chemical plates and the savings in shorter exposure is quite apparent to us at the end of the day.

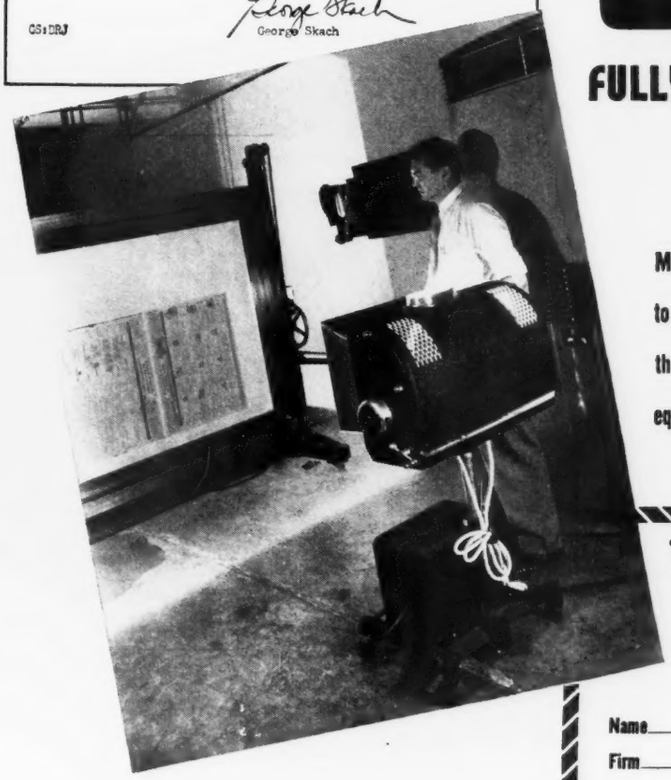
Yours very truly,

SCHULTZ LITHOGRAPHING COMPANY

George Skach

GS:DRJ

George Skach



STRONG GRAFARC

FULLY AUTOMATIC • HIGH INTENSITY ARC LAMPS

Models for all photo-mechanical reproduction processes. Adapters to fit most cameras and photo-composing machines. Because of the low current requirement, the present line supply wiring to your equipment is usually adequate.

THE STRONG ELECTRIC CORPORATION
307 CITY PARK AVENUE • TOLEDO 2, OHIO

( ) Please send free literature on Grafarc Lamps.

Name_____

Firm_____

Street_____

City and State_____

To Publishers using upward of 10,000 gallons of ink a year:

If You're on Drums, Install a Tank

...*There's Still Time*

Why depend on an ever-tightening drum shortage when tank truck delivery will assure you of a constant source of supply? Besides, there are savings.

You can get delivery of a standard steel tank of 500, 1000, 2000 and 3000 gallons in from 3 to 6 months. Tank builders in the East are quoting 4 months delivery; in the mid-West 3 to 6 months. After that, it's a routine installation job.

Steel drums are vital to defense—they're already as short or more so than during World War II—when they were on allocation. Their use for petroleum, chemicals, gunpowder and new uses for transporting engines and engine components will limit their availability.

Huber will help you locate tanks and equipment for your installation.

Huber Ink Tank Stations are ideally located to serve you:

BOSTON	ATLANTA	EAST ST. LOUIS
BAYONNE, N. J.	CHICAGO	NEW ORLEANS
WASHINGTON, D.C.	CLEVELAND	BORGER, TEXAS

Your decision to install tanks will save steel for the emergency.

HUBER

J. M. HUBER CORPORATION

Huber Products in Use Since 1780

Sales Offices: **Boston • Brooklyn • Chicago • New York • East St. Louis, Ill.**

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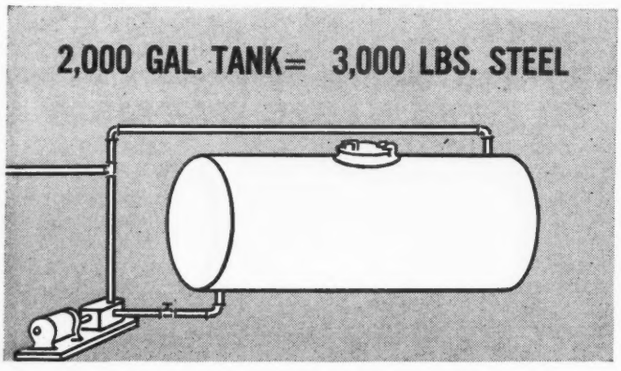
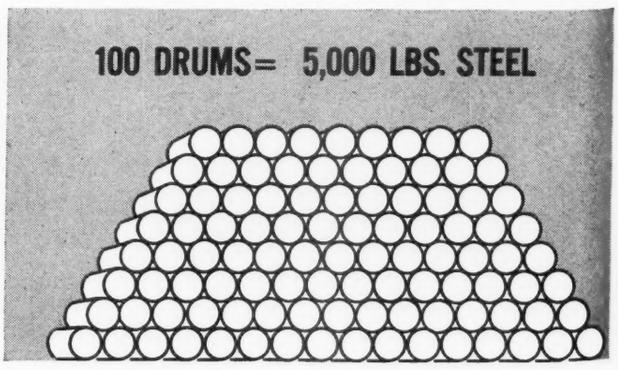
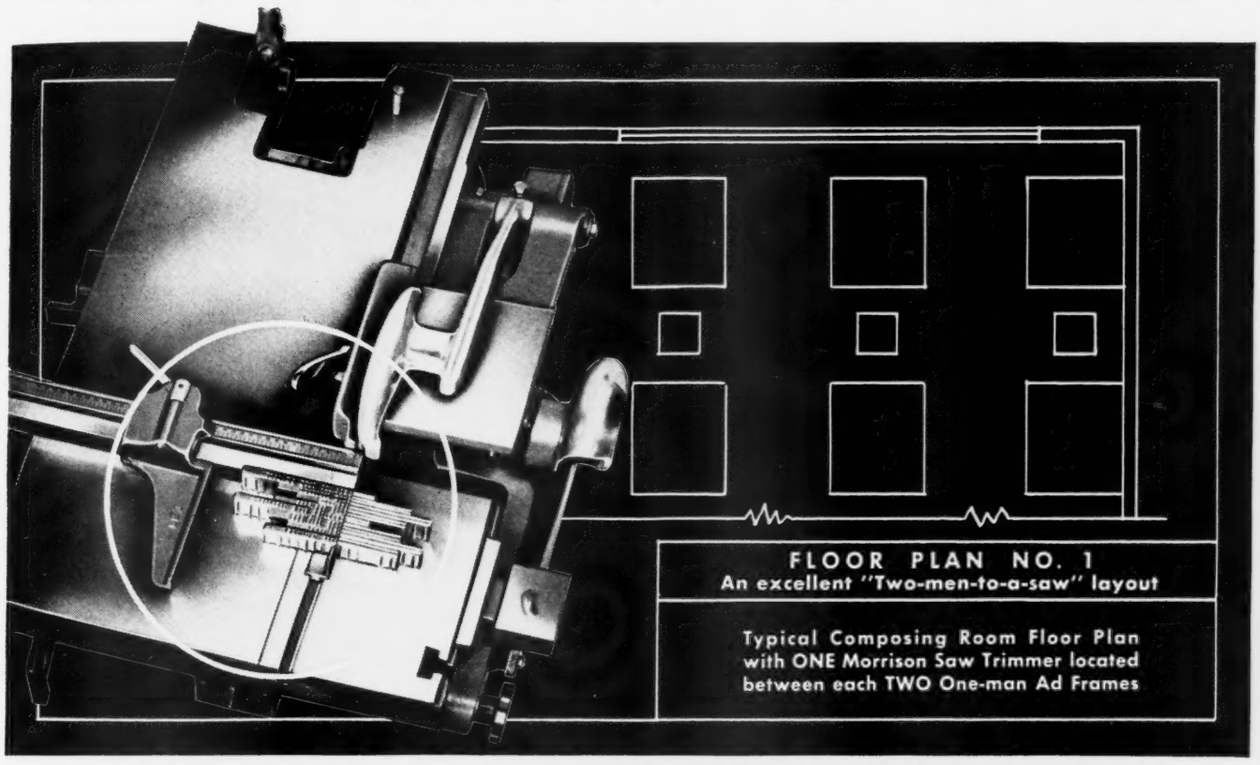


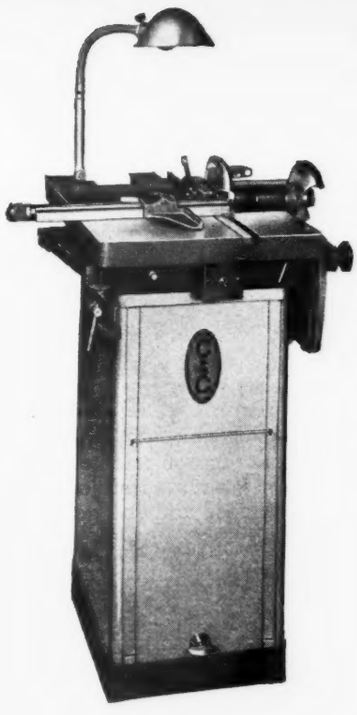
ONLY 3,000 LBS. OF STEEL are needed for a 2,000-gal. tank installation, including 500 ft. of pipe and the pump. Installation is good for at least 20 years.



5,000 LBS. OF STEEL—100 DRUMS—are required to maintain a 10,000-gal. ink consumer. With average loss of 20% a year, total steel investment must be replaced every 5 years.

Composing Room Efficiency Centers on your SAW TRIMMER


FLOOR PLAN NO. 1
An excellent "Two-men-to-a-saw" layout
Typical Composing Room Floor Plan with ONE Morrison Saw Trimmer located between each TWO One-man Ad Frames



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Model 3-A Saw Trimmer

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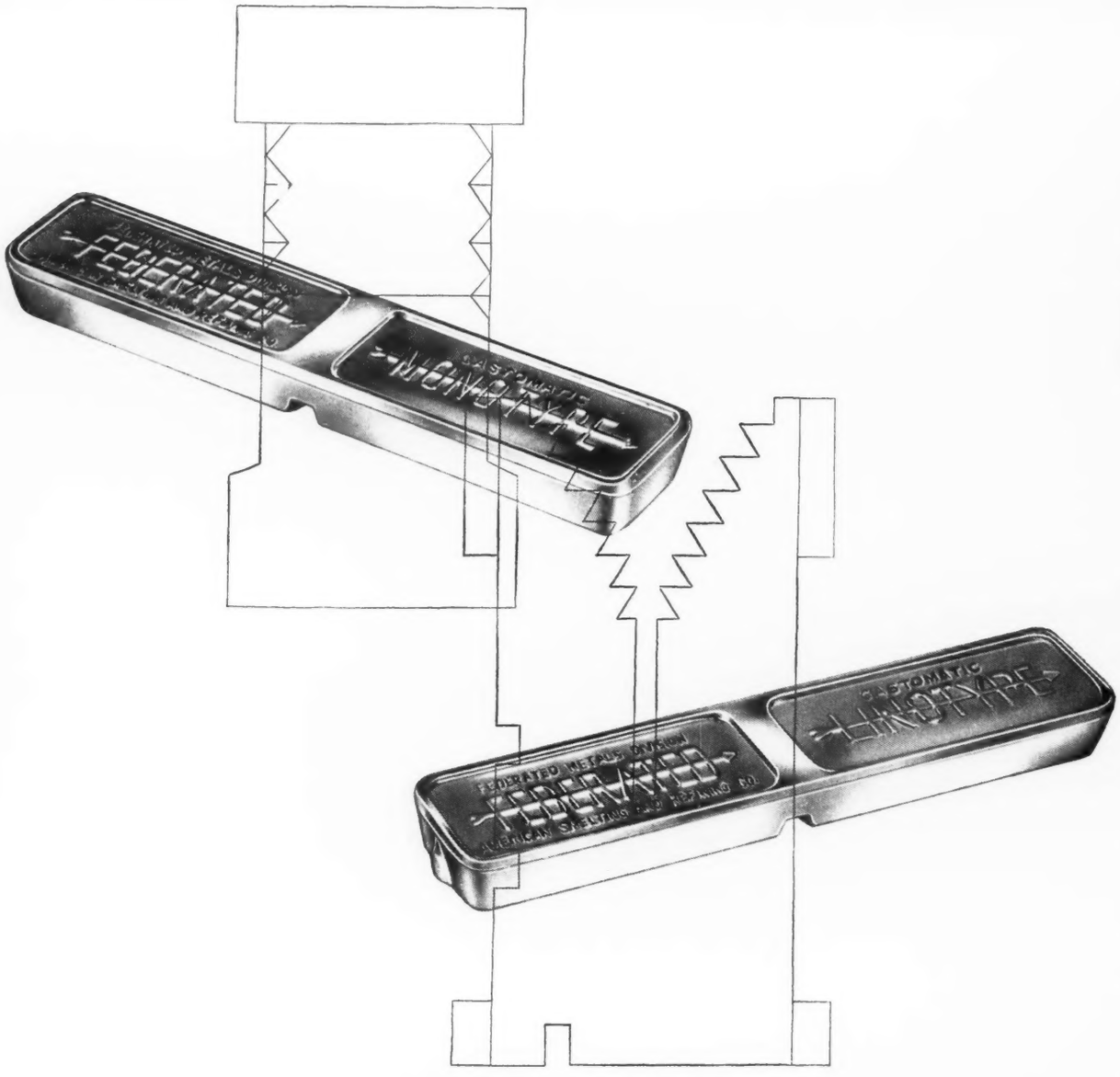

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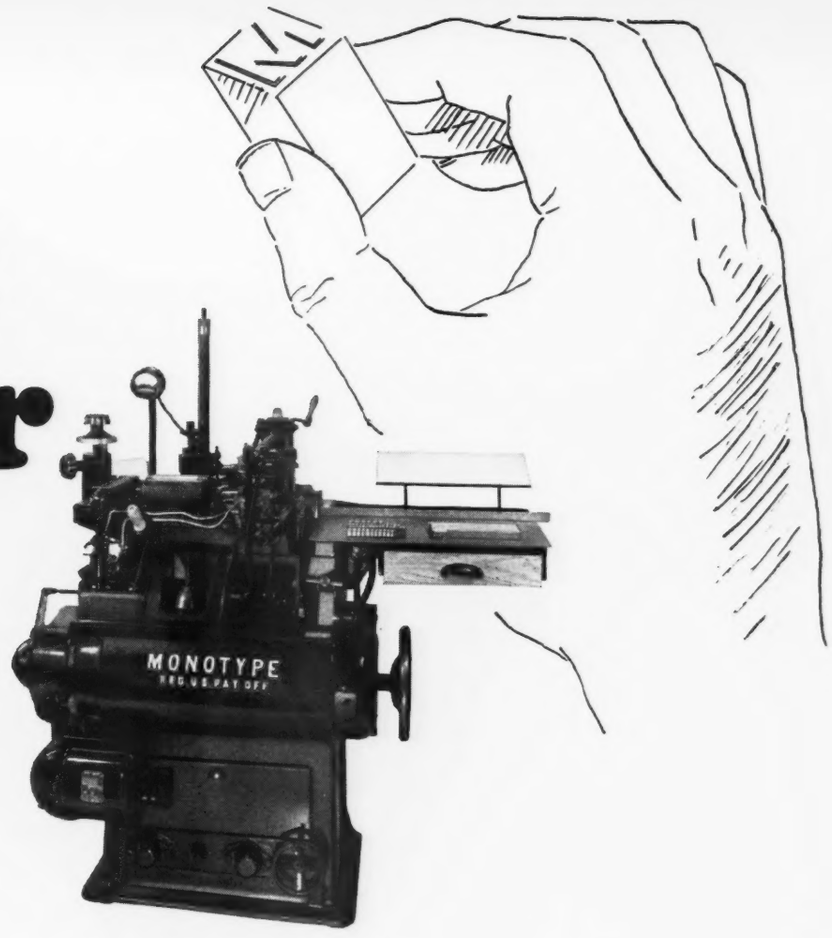

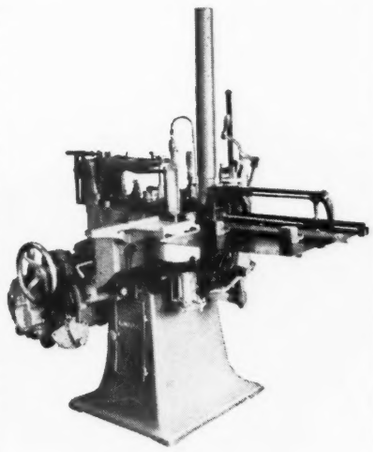

the MONOTYPE

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The Monotype Giant Caster makes type of uniform height-to-paper, clear and sharp of face for good printing, and densely cast to resist the pressures of all printing, plating, and mat-making processes. The typographic resources available to Monotype Giant Caster users include all Monotype cap and lowercase fonts, figures and points in all available sizes from 14 to 72 point and 84 point title line, special ornaments and corner-pieces from 14 to 72 point, special full-face figures and fractions from 14 to 108 point, special superior figures in sizes up to 72 point, and quads and spaces from 14 to 72 point. Metal furniture from 14 to 72 point sizes can be made in any length from 1 pica up to whatever length is desired. Full information will be sent gladly on request.

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LANSTON MONOTYPE MACHINE COMPANY • 24th at Locust St., Philadelphia 3, Pa.

The name MONOTYPE is a registered trade mark, and therefore the exclusive property of Lanston Monotype Machine Company, and identifies the products of this company

BRANCH OFFICES: 116 Spring St., N. W., Atlanta 3, Georgia. • 170 Summer St., Boston 10, Massachusetts • 216 W. Jackson Blvd., Chicago 6, Illinois • 441 Lexington Ave., New York 17, New York • 55 New Montgomery St., San Francisco 5, California • IN CANADA: Monotype Company of Canada, Limited, 77 York St., Toronto 1, Ontario, Canada.

Specify MONOTYPE For the Finest in Printing

(Text set in Monotype Stymie Medium, No. 290J)

Announcement . . .

For many years we have been known as the NEW ENGLAND NEWSPAPER SUPPLY CO. even though our corporate name has always been New England Fibre Blanket Company. The designation "Supply Co." has constantly caused much confusion by implying that we carried complete lines of newspaper supplies.

To correct this inference we shall no longer use the name "Supply Co." Henceforth, all business shall be conducted under the name: **"NEW ENGLAND FIBRE BLANKET COMPANY."**

Our principal line is press blankets! We do handle stereotype moulding materials and a few accommodation items, such as chisels and router bits; gummed space packing and gummed Kraft tape.

THE BLANKET SITUATION!

WE ARE LEAVING NO STONE UNTURNED in our effort to keep our blanket stocks in a position to supply all needs. Shortages and price changes are be-deviling us—as well as everyone! The products relying on rubber shall likely be the first to become unobtainable, Cotton cloth is nearly as difficult to get.

HOWEVER, WE AT NEW ENGLAND have been unceasingly tracking down sources of material, and we are confident that we can keep your presses blanketed—in some manner It may be that we will need co-operation from the pressmen in the matter of type of packing, as well as some compromise on gauge. Right now we can see a good supply of materials available, but there may not always be just the gauge you prefer.

WITH THE PRESENT UNSETTLED SITUATION, we would suggest that you discuss your blanket problems with us so that we, in turn, can figure a way to be of service to you. If you have not been our customer recently, do not let that deter you—you will be given the same consideration as the next fellow.

WE PROMISE TO DO OUR BEST!

NEW ENGLAND
FIBRE BLANKET COMPANY

WORCESTER, MASSACHUSETTS, U. S. A.

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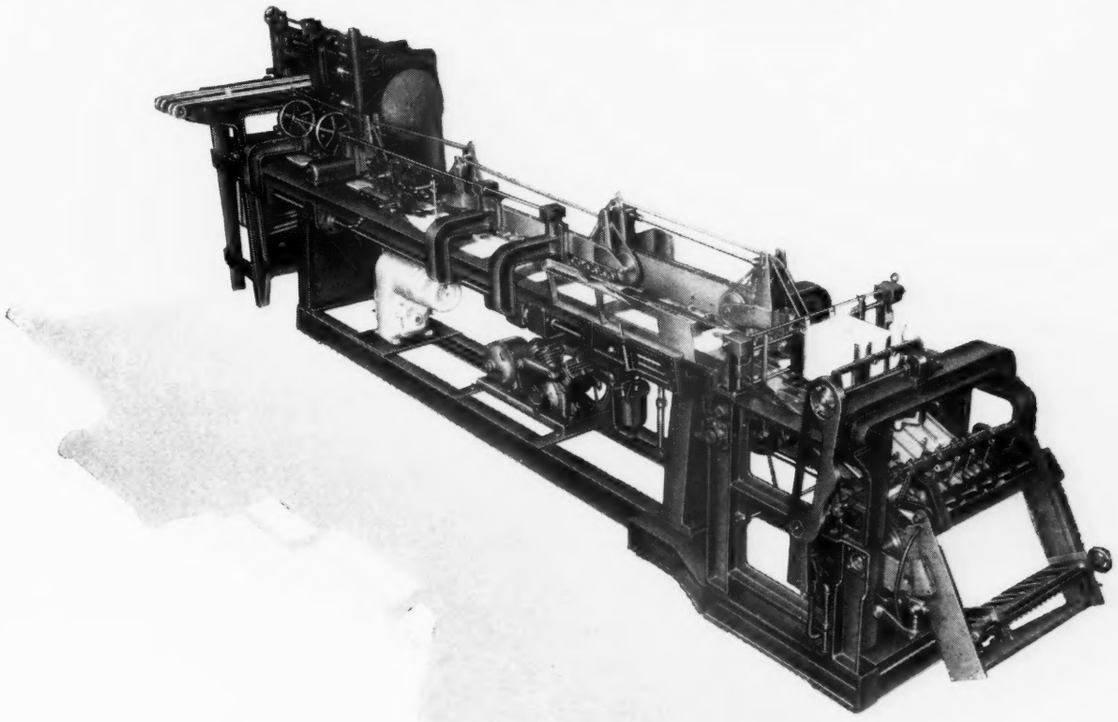

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DOES ALL THREE!

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UNIT PRESS DRIVES...CONTROLS...REELS AUTOMATIC TENSIONS...SPEED PASTERS

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The long list of 1950 Cline-Westinghouse installations includes such plants as . . .

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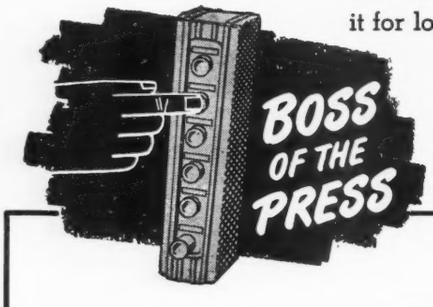
Illinois State Journal	**Syracuse Herald**
Gannett Newspapers, Rochester	**Denver Post**
La Razon, Buenos Aires, S.A.	**Toronto Daily Globe**
Newark Star Ledger	**Wilmington News**
Birmingham News & Post Herald	**Seattle Times**
El Pais, Montevideo, S.A.	**Atlanta Journal**
San Jose Mercury News	**Los Angeles Times**

Four out of five of the major newspaper plants in the United States use Cline-Westinghouse Electrical Equipment. Many of them have used it for long periods of years and specify Cline exclusively.



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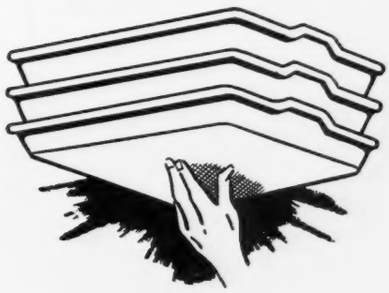
CHIP-PROOF...

CORROSION PROOF...

NEARLY 3 TIMES LIGHTER



... and only a fraction of the cost!

20" x 24"
(SEE COUPON FOR OTHER SIZES)

$19.50
INCLUDING FEDERAL TAX

You *don't* have to be Charles Atlas to lift *this* tray . . . *it weighs only 3 pounds 10 ounces!* You *don't* have to dig deep into the bankroll to buy *this* tray . . . *it costs a lot less than stainless steel, and in the long run, than porcelain!*

You *don't* have to handle the Chemco Plastic Tray like a carton of eggs, either! There's no coating to chip and pave the way for rapid corrosion as with porcelain trays. It's solid, tough, *one-piece plastic* . . . molded with reinforced bottom and self formed handles . . . *absolutely corrosion proof to all photographic processing and plate making chemicals of operating strength!* This is the tray that's built to take all the hard knocks of every day use in your darkroom. It will give you more service at lower cost than any other tray on the market!

MAIL COUPON TODAY!

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PE-2

Gentlemen: Please follow the instructions I have checked below:

—Send me_____20" x 24" Chemco Plastic Trays, at $19.50 each. I enclose $_____

—Send me_____20" x 24" Chemco Plastic Trays, at $19.50 each. Bill me later.

—I want more information on Plastic Trays in the following size(s): 22" x 28", 18" x 22", 16" x 20", 14" x 17", 11" x 14", 8" x 10", 5" x 7". (CIRCLE ONE OR MORE)

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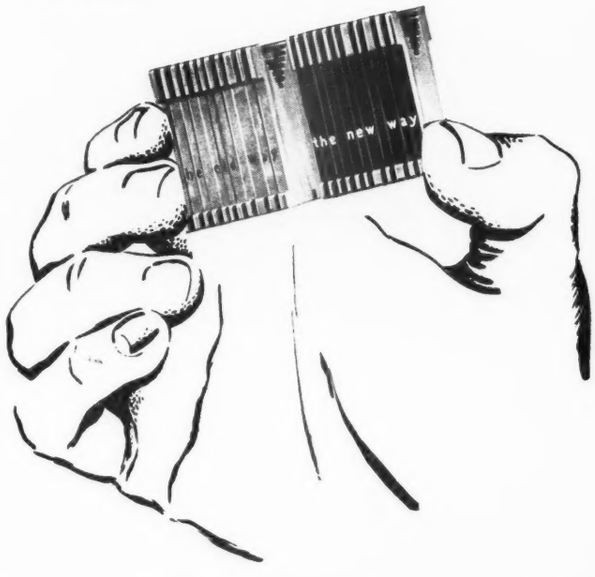

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Essential Accessories for the Pressroom

PRINTING EQUIPMENT
Engineer
February 1951

By STAFF WRITER

I.

THE tendency today in planning new commercial printing plants is to provide a one-story building, thus avoiding the cost of elevators and other inconveniences caused by the force of gravity. When the lot area does not make the one-floor plant practicable, the pressroom and stockroom should be located on the ground floor. If possible, the stockroom temperature and relative humidity should be close to that of the pressroom in plants producing high grade printing, in order to minimize trouble from difficult feeding, register, slurs, wrinkles, static, offset, delayed drying of ink and so on.

With the improved fixtures available, it is possible to light up any dark areas in a pressroom. But in order to hold down the cost, the presses should be arranged to get as much daylight from old Sol as possible. Whether the feeder end or the delivery end of the cylinder press should be near the window is a moot question. If the work is of such a nature that close scrutiny of the delivered sheets involving say close register or numbering is always necessary, it is better for the delivery to be near the window.

There should be an aisle of sufficient width between the presses and the windows and between the presses and the center of the room to permit the unhampered travel of trucks loaded with stock to and from the presses to the bindery, also the travel of heavy forms on form trucks from the form rack to the presses and back again.

In a very large plant the ink room with mill(s), machine shop and boiler room and sometimes power plant are located close to the pressroom for convenience and to avoid travel of workers and materials.

The toilet and wash rooms should have outside ventilation with concrete floor built to allow the water to drain to the center of the room so that the entire floor may be washed with a hose. Lockers for the pressroom workers may be placed against the walls, unless the floor area is such that the lockers can be placed back to back in double rows as well as against the walls in single row.

Preferably the foreman's desk should be located so that he may see what is going on throughout the room. For this reason, it is inadvisable to have an L or Ls branching off from the main room. In any event, the arrangement of the room should be such that all sections of the room should be easily accessible to the foreman.

Form Racks

The form racks[1,2] preferably made of cast iron, should be located near the foreman's desk or, to hold chases with and without forms. The sections of the racks may be fastened to the floor and should be numerous enough to hold all chases used in the plant.

Form Trucks

In well managed pressrooms form trucks[1,2,3] are used to convey forms of all sizes from the form rack to the cylinder presses and back again—with safety. The trucks are small. The pressman or assistant places one edge of the chase in the groove of the truck, holds the opposite edge and nearest corner of the chase with his hands and can push the truck easily and safely.

Form Rack Lift

In pressrooms in which heavy forms are printed, a form rack lift[4] will be useful. The frame is of triangular shape and gears at its top, operated by a crank, raise the form to the desired height when it may easily be slid off to the bed of the press. The rack is mounted on rollers so that it may be pushed to any part of the room. The frame should be built to take the largest form handled. Smaller forms can be carried on the same frame.

Register Cabinet

This register cabinet[1,5] has found wide acceptance as a means of quickly registering difficult forms. The cabinet is of hard wood with a glass top and a space below the top for electric light. A sheet of the printed form is laid on the glass and the light shining through the sheet permits exact positioning of the new form. This device saves a lot of time otherwise spent in measuring. This cabinet should be near the foreman's desk.

Marking-out Cabinet

The marking-out board may be placed in a cabinet consisting of black cloth on the top and four sides draped over a rectangular frame. Light is obtained from a fluorescent tube close to and at the top of the board, properly shaded over the tube to spread light rays over the sheet. Spaces may be provided for pieces of tissue, French folio and paste and so on in the cabinet, or these may be kept in the drawers of the makeready table. The marking-out board is adjustable for height with a strip or cleat at the bottom to keep the sheet from sliding off. This strip may be lowered when scanning a large sheet.

In some pressrooms home made marking-out boards are placed between windows to catch the daylight at suitable angle but the manufactured cabinet may be used day or night.

Makeready Tables

Makeready tables[6] are provided with drawers to hold the various papers used in patching up the marked-out sheet, overlay knives, paste and so on. The top of the table may be covered with a sheet of zinc or hard pressboard for spotting up the overlay, to provide a hard surface against which to cut.

Roller Cabinets or Racks

Large rollers not in use should be stood in a vertical position in a floor rack to avoid sagging.[7] The very small rollers of platen presses may be stored horizontally on racks contained in cabinets.[5] The rack contains sections designed to hold rollers of various lengths used on the different presses and one section may hold the rollers of one press. The racks may be drawn out and pushed back into the cabinet by means of a handle and slide on rollers at top and bottom. When cut, the rollers are easily removed or inserted, when closed, the rollers are in a box.

Ink Cabinets

A cabinet[5] with racks on the order of the roller cabinet may be used for storing inks if shelves are substituted for roller stands. Each shelf may be reserved for a certain kind of ink.

Static Eliminators

All cylinder presses should be equipped with static eliminators[3,9,11,16,18]. If there is static in the sheets coming off the feeder, these may be sprayed with an aqueous mist. Eliminators on the presses help the pressman and indirectly the folder operator by making possible better jogging on the delivery.

Infrared Sheet Heaters

Infrared sheet heaters[10] are an aid in the forced drying of ink. The heaters may be used in different positions, beneath the cylinder or on the delivery and even above the rear end of the feedboard with the rays directed on the edge of wavy sheets coming off the feeder pile.

Roller Sprays

Roller sprays are useful in keeping rollers in good condition by coping with loss of moisture in a dry, very warm pressroom. A mist of mixed glycerine and water or water alone is sprayed on the

rollers as long as necessary while the press is running.

Metal Bases

There are different types of metal base[4,12,13] in use for plate printing and an ample supply of the kinds preferred should be kept on hand and stored after cleaning in a cabinet of metal. A cleaning outfit which includes a special brush and an ample supply of catches are also needed.

Long Straightedge

A good straightedge[14] as long as the cylinder of the largest press in the room is useful in testing the height of drawsheet relative to the cylinder of the press, in lining up forms and other ways. It should have a hole in one end for hanging on the wall, near the foreman's desk.

Tool Box

Some presses are provided with a drawer beneath the platform on the feeder side of the press which is a convenient receptacle for the wrenches needed on the press and its automatic feeder. Unless provided by the employer, each pressman should supply his own tool box. Some useful items are a 2 ft. rule, an 18 in. straightedge, a 72 in. steel tape in a case, a file, brads, hammer, punch and set, pincers, screwdriver, 1 in. wide wood chisel, micrometer, makeready knives, oil stone.

Press Tape Fasteners

For presses using tapes[1] a supply of tape fasteners in reserve is very important in an emergency. Some tapes are secured at the ends with metal fasteners of various kinds while others are held together with a special adhesive. These various fasteners should be kept in a cabinet.

Safety Cans

Safety cans[15] should be provided in quantity sufficient to be handy and convenient for all workers in the pressroom. A can for both clean wipers and dirty ones and used waste consists of two sections, separated vertically in the center, each section with a spring-hinge cover that must close. Clean wipers are kept in half the can and used wipers in the other. These cans are of galvanized iron with raised bottom and the bottom outside edge turned up to withstand rough handling.

Safety cans for the various cleaning fluids which are fire hazards are made of various materials and different construction but all should close automatically after withdrawal of fluid.

Waste paper cans with lid closed by a spring should be provided in ample supply according to the size of the pressroom. Some large pressrooms have one or more central stations on the floor in which the waste paper is placed. It is carried through ducts by compressed air to a location away from the pressroom to a baling machine.

A separate safety can is provided for empty ink cans.

Plate Cleaning Outfit

In some large plants a man is kept busy cleaning plates before storing them after a press run for anticipated reuse in the future. This may be done by washing first with lye water or other detergent and completing the cleaning with steam.

Another method is to mount two tanks, heated by gas or electricity on a table—the one for lye, the other for preferably running water. The dirt, waste water and lye are carried away into a soil pipe. A drip rack at the rear of the table is used to set plates on edge to dry.

Combination Locker-Washstand

In some plants the lockers, with vents on the door for ventilation are located separately while in others they are located over the wash basins so that each worker may have his own place for his toilet articles.

Delivery Racks

Sometimes jobs are encountered which must be delivered into racks[5]. These may be had of interlocking type stacked one above the other to convenient height for the delivery. As soon as the top rack is nearly full, it is lifted off the stack, thus preventing the different lifts of wet printed sheets from contacting.

Reglet and Furniture Rack

In a well managed pressroom where the pressmen must lock up forms it is customary to have a reglet and furniture rack[1,5,13] between every two presses. This makes for convenience and to save time and maintains an orderly arrangement instead of pieces of furniture on the floor around or under the press.

Feedboard Light

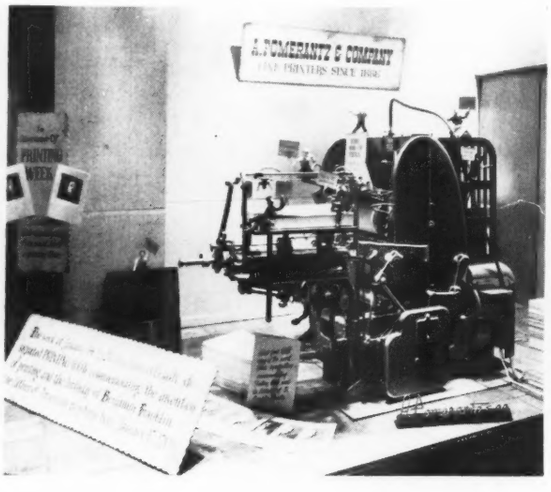
Especially beneath the feedboard of the cylinder press is a light desirable. In case a bulb is used, a wire guard should be provided to prevent breaking the bulb. If a fluorescent fixture is used, it is not usually necessary to guard it.

Tympan Paper Bracket

It is possible to buy tympan paper cut to size and scored for the smaller presses. Otherwise, tympan paper in rolls of widths suitable for the different presses should be carried in brackets[2] provided with a blade against which the sheet is torn from the roll.

(*To Be Continued*)

[1]American Type Founders.
[2]Rouse, H. B., & Co.
[3]Southworth Machine Co.
[4]Printing Machinery Co.
[5]Hamilton Mfg. Co.
[6]Robert Royden Greer.
[7]Bingham's, Sam'l, Son Mfg. Co.
[8]Chapman Electric Neutralizer Co.
[9]Simco Co., The.
[10]Doyle, The J. E., Co.
[11]Continental Printing Equipment Co.
[12]Blatchford Div., National Lead Co.
[13]Challenge Machinery Co.
[14]See your press manufacturer.
[15]Justrite Mfg. Co.
[16]Hewson, The John, Co.
[17]Herbert Products, Inc.
[18]U. S. Radium Corp.



Philadelphia Printing Week — In observance of 1951 Printing Week, A. Pomerantz and Co., Philadelphia, operated a Miehle V-50 Vertical press as part of the window display pictured here. Two commemorative keepsakes were printed for public distribution, a woodblock reproduction of Benjamin Franklin and an excerpt from his *Motion for Prayers*.

Graphic Arts Conference

The 1951 New England Conference for the Graphic Arts will be held April 16 and 17 at the Hotel Statler, Boston, according to the Conference Chairman, Carlton M. Strong, Manager of the Boston office for the Rumford Press, Concord, N. H. Other officers of the conference are as follows: Vice Chairman, Arthur T. Howard, A. T. Howard Co.; Treasurer, Howard Wallingford, Tileston & Hollingsworth; Secretary, Howard S. Patterson, Graphic Arts Institute of New England, Inc.; and President of the Graphic Arts Institute, Ex-Officio, Robert W. Williamson, T. O. Metcalf Co. The two day meeting will include a series of clinics on specific problems facing those in the Graphic Arts and talks by leading speakers.

Light

in the Printing Plant

By DR. W. SCHWEISHEIMER

THE tremendous need for good illumination in printing plants is obvious when we consider the activities in only a single part of the printer's job: Composing.

Operations carried out in the composing room (hand) include the visual task of reading copy, locating, sorting, identifying and arranging metal type, slugs, and filling and spacing material. This work involves the seeing and differentiating of very small type and the identification of the various punctuation marks.

As for composing on the Linotype machine, particularly good illumination is needed on the working place at the copy holder, assembler and pi stacker, while less illumination might be tolerated at the keyboard and slug galley. At the Monotype machine the copy holder needs good illumination for satisfactory performance. Because of shiny surfaces, diffusion of light is desirable to minimize the risk of reflected glare.

Advantage of Good Illumination

There is no doubt that good illumination is of primary importance to the single pressman as well as to the efficiency of the whole plant. The satisfaction that the skilled printer enjoys in doing a good job, is increased by good illumination. The illumination must be sufficient at the observing point if the best efficiency should be realized. Without investment in aiding the printer's seeing ability employers will miss the full advantage of a man's potential skill for production and efficiency. The clearer the printer sees his object the more valuable he is to production.

Not Always Sufficient

Good illumination alone is not always sufficient. The individual case has to be worked out as well. A young printer for several months suffered from recurrent headache in the late afternoon which noticeably reduced his working efficiency. He looked everywhere for the cause of the trouble: a previous sinus trouble, or insufficient hours of sleep, faulty eating habits, fatigue. Eventually an eye doctor found out that his eyes were astigmatic—the axis of his eyes was sidewise directed. He prescribed the correct glasses for the printer and the headaches ceased immediately.

Illumination and Efficiency

Progressive printing plants use the most modern illumination equipment, part of which may consist of fluorescent lighting. Modern lighting techniques are being employed to bring better production in every type of printing plant. The Illuminating Engineering Society has worked out acceptable standards for levels of illumination. Their lists recommend minimum standards for industrial interiors. The figures refer to the general lighting or lighting throughout the total area involved as measured on a horizontal plane 30 in. above the floor.

Light in a plant is measured by the footcandle-meter or illuminometer, an inexpensive instrument, easy to handle. But determining the exact amount of light required in a plant is not a subject to be estimated by a non-expert with the unaided eye. Scientific instruments in the hands of trained technicians will find the best possible solution.

Everybody knows, of course, that good illumination is needed for proofreading. This, however, is not all. Here are the figures given in the table of the Illuminating Engineering Society. A "footcandle" is the amount of light illuminating a surface by a standard candle at one foot distance.

Printing Industries	Footcandles
Type Foundries.....	
Hand casting.....	30
Machine casting.....	20
Matrix making, dressing type.....	above 100
Font assembly-sorting..	50—100

The latter two figures mean that a combination of general illumination and supplementary light at the point of work is necessary. The design and installation of combined illumination must not only provide a sufficient amount of light but must also provide the proper direction of light diffusion, eye protection, and insofar as possible must eliminate direct and reflected glare as well as objectionable shadows.

Printing Plants	Footcandles
Presses.....	30
Proofreading.....	above 100
Imposing tables.....	above 100

The seeing task of the latter group requires the discrimination of fine details by utilizing the reflected image of a luminous area, or the transmitted light from a luminous area.

Electrotyping	Footcandles
Blocking, thinning.....	30
Electroplating, washing, backing.....	20
Molding, finishing, leveling molds, routing, trimming.	50 to 100

Proper lighting and strong illumination are factors which help greatly in avoiding eyestrain. Improper lighting shortens the duration of all normal seeing. The same holds true for flickering light. Sunlight and artificial light glaring into the eyes or reflected from such bright surfaces as glossy paper and tabletops and walls are harmful to the eyes.

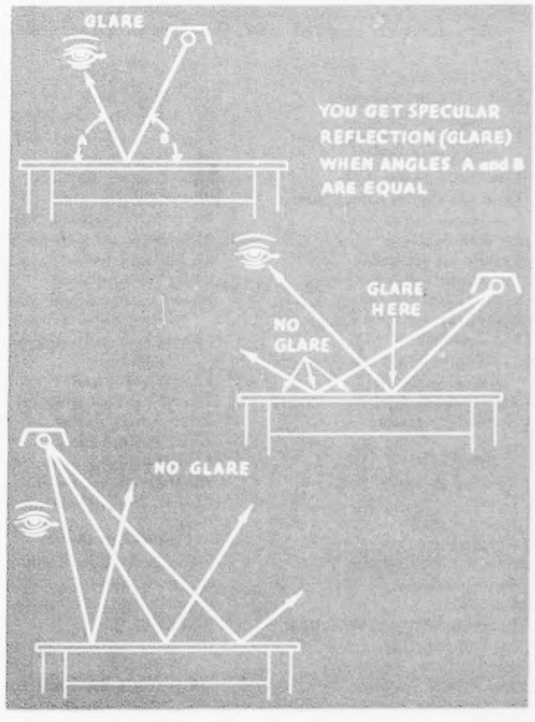
Avoid Contrasts

Reading when the page is brightly illuminated and the rest of the room is comparatively dark often causes unnecessary eyestrain and fatigue. Some of the light should go to the ceiling. It is an odd observation that three times as much light is required for reading a newspaper as easily as a well-printed book printed with the same type. Light acts as a magnifier of small details. An object must be about twice as large to be visible under 1 footcandle of light as it would have to be under 100 footcandles; 100 footcandles is approximately 1 per cent of maximum daylight.

Infiuence of Color on Illumination

It has been proved in extensive studies that bright, contrasting finishes on production machinery result in increased safety and efficiency, as well as improved

(*Continued on Page 56*)



The Glare Problem—It can be caused by inadequate diffusion. The problem and the remedy is best illustrated in the accompanying diagrams. This principle applies to any department in the plant. Diagrams Courtesy *F & L Litho Letter*.

Expansion Program Completed at Birmingham News Company

By H. EARLE RUNION*

*Runion Production Engineers, Louisville, Ky.

THE Birmingham News Co., publisher of the Birmingham *News* and the *Post-Herald*, has completed an expansion program which has been under way for the past two years. From 1945 the *News* was faced with the problem of rising costs and insufficient productive capacity. Clarence Hanson, the publisher, decided to employ outside assistance to plan the expansion program. Local architects, although well qualified to design the building and supervise the construction, usually have little, if any, experience with the complex operation of producing a newspaper. The *News* retained the firm of H. Earle Runion, Production Engineers, Louisville, Ky. The employment of this firm eliminated the handicap inherent in placing the responsibility of an expansion program on anyone with limited local experience.

Before the *News* purchased new equipment or had any building plans drawn, Runion made a survey of the existing production facilities, and drew up plans of the present operation, showing the location of each piece of equipment, for study. From these plans it was possible to locate bottlenecks and inefficient practices brought on by building inadequacy; and, with the assistance of the various department heads, the amount of new equipment required to meet production schedules and the needs of future expansion, were determined.

New layouts were prepared showing the proposed location of all new equipment together with the rearrangement of the existing equipment, to obtain efficient operation. In order to accomplish this, particular attention was paid, first, to the location of interdependent departments in order to keep their communication lines as direct and short as possible; second, to the location of equipment within each department in order to eliminate back-tracking and bottlenecks; third, to the use of mechanization to eliminate manual labor wherever economically justifiable.

Start With the Pressroom

Obviously, the place to start was the pressroom. Here an 8-Unit 2-folder Goss Anti-friction Press installed in 1940 was producing 11 editions with a combined daily circulation of 212 thousand. The Saturday paper had to be limited in order that the Sunday Social Section could be run on the press at the same time.

The *News*, which was printing its 8-page comic section on a separate Goss color press, planned to increase its comic section from 8 to 12 pages. This meant the color press would have to make two runs and the mailroom would be burdened with an additional insert.

There was no space in the existing pressroom for two additional units required for immediate needs. However, Mr. Knighton, and Mr. Seller who is in charge of the pressroom, agreed this would not provide for future growth, for a press breakdown, or for any decrease in the time required to print the paper and eliminate tight press schedules. It would also seriously curtail the space available for newsprint storage. It was decided to purchase a new Goss 10-unit 2-folder Headliner Press and keep the existing press to cut down the printing time schedules.

Investigation revealed it would be more economical for the *News* to purchase its comics than to print them. It was decided to dispose of the color press. Even without the color press there was insufficient room in the existing pressroom to house both the existing and new black-and-white presses. Therefore, it was necessary to relocate the pressroom.

Attention is called to the unoccupied bay set aside for future press units. The area will be used temporarily for newsprint storage until additional press units are needed.

A ventilating duct equipped with a battery of removable filters, is installed between the two lines of presses to control ink mist and prevent the accumulation of paper dust. The writer thinks the system was the best of its kind at the time of installation. However, with the cooperation of the Birmingham *News* and the Louisville *Courier-Journal*, new ideas have been developed since then to more adequately cope with the ink mist problem.

Keeping in mind that the pressroom should be accessible to an unloading dock, and must have direct communica-

Equipment Layout and Workflow Chart—Birmingham (Ala.) *News* and the *Post-Herald* Composing Room.

1.—Composing Room Supt's Office
2. News Copy tubes from editorial offices
3.—News copy desk
4.—Headletter Linotypes
5.—News Linotypes
6.—News dump
7.—News assembly
8.—News after assembly
9.—News corrections
10.—News proof press
11.—Magazine rack
12.—Machinists' work bench and cabinets
12a.-Overhead signal board
13.—Tool cabinet

Ad Alley

14.—Ad markup
15.—Ad Linotypes
16.—Ad dump
17.—Table
18.—Ad corrections
19.—Cut storage
20.—File
21.—Mat storage and new cut storage
22.—Ludlow machines
23.—Future Ludlow
24.—Ludlow matrix cabinets
25.—Plate saw
26.—Ad foreman's desk
27.—Ad proofreaders' desk
28.—Signature file
29.—Galley storage
30.—Saw-trimmers
31.—Ad assembly banks
32.—New ad assembly banks
33.—Page trucks
34.—Type cabinet
35.—Double page proof press Slug, rule & base
36.—Elrod strip and border casters
37.—New Elrod
38.—Monotype caster
39.—Future Elrod
40.—Work bench
41.—Monotype storage
42.—Borders and base material
43.—Mitering machines

Makeup Dept.

44.—Assembly banks
45.—Ad storage cabinets
46.—20-page storage cabinets
47.—OK type
48.—Classified page makeup trucks
49.—Plate lift from engraving department
50.—Classified bank
51.—Future storage
52.—Page proof press
53.—5 col. proof press

Stereo Dept.

54.—Stereo mat roller
55.—Direct pressure press
56.—Stereo mats
57.—Mat trimmer
58.—Inframat drier
59.—New scorcher
60.—New mat packing tables
61.—Finaltrim
62.—Dry former
63.—New dry former
64.—Mat storage
65.—Lift
66.—Scorcher
67.—Kemp 10 T. immersion burner pot
68.—Junior Autoplate
69.—Automatic Autoplate
70.—Plate conveyor
71.—Tail conveyor
72.—New vacuum pump
73.—Vacuum pump
74.—Three new Kemp carburetors
75.—Autoshaver
76.—New Autoshaver
77.—Autoconveyor
78.—Plate drop to pressroom
79.—Stereo foreman's office

Flat Casting Dept.

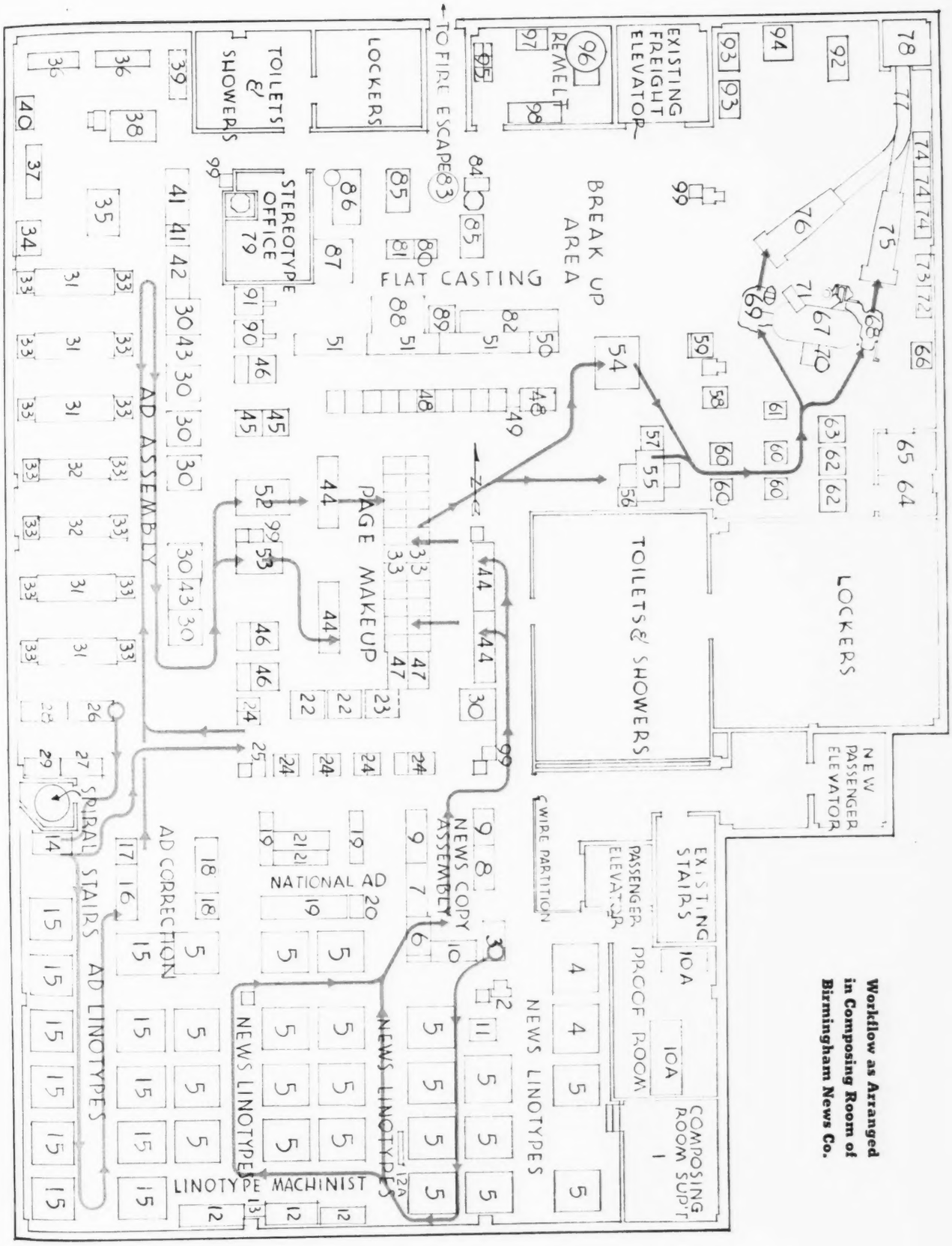
80.—Table
81.—Flat scorcher
82.—Mat packing table
83.—4500 lb. pot
84.—New carburetor with vacuum pump
85.—Flat casting boxes
86.—New rotary shaver
87.—Saw and trimmer
88.—New saw and trimmer
89.—New saw
90.—Router
91.—New router

Color Plate Finishing Room

92.—Color pre-register
93.—Masterouters
94.—Double plate finishing

Metal Remelting

95.—Metal carts
96.—Remelting pot
97.—Pig casting
98.—Pig storage
99.—Drinking fountains (3)



Workflow as Arranged in Composing Room of Birmingham News Co.

Views in Mechanical Departments, Birmingham (Ala.) ***News*** **and** ***Post-Herald*****—Expansion Program Completed.**

1.—Here the stereotyper is readying a form to be molded by direct pressure.

2.—The page stereotype plates are deposited on the plate conveyor automatically when they merge from the Autoshaver and are carried through the Y switch to the plate drop for delivery to the pressroom.

3.—Newsprint is handled by Elwell-Parker electric truck. A roll may be grabbed by the truck clamp from horizontal position, rotated through a 90 deg. arc and then is deposited in a vertical position for temporary storage.

4.—Each of these four ink tanks holds 2 thousand gal. of ink. Four Tokheim gauges on the reelroom level provide the measure of ink in each tank.

5.—In the mailroom, the three supplement processing conveyors are supplied with papers from the eight press deliveries by 10 Cutler-Hammer delivery aprons, two of which are equipped with switching arrangement, as shown in this illustration. Thus, it is possible to deliver papers from either of the two Goss presses to any one of the three processing conveyors.

6.—View of loading dock with stationary conveyor running alongside the wall through length of the dock. Also shown are the portable loading dock conveyors which, when set, automatically convey bundles from the stationary conveyor, across the platform and into the truck. The portable conveyor is fitted with its own motor for driving the belt and a hinged apron enters the tail of the truck.

tion with the stereotype foundry and with the mailroom which must be able to get papers to a loading dock in the shortest possible time, the pressroom was located just east of the existing building, with the mailroom directly overhead. This permitted shaft ways for the new addition and the loading dock just south of it. It also provided a truck loading area separate from the public street or alley.

The pressroom was made 129 ft. long by 81 ft. wide to house the two black-and-white presses side by side and to provide room for a future third press. It is also possible to add to the presses until they reach 11 units, without further construction.

Four stairways provide easy access from the press operating level to the reelroom. The pressroom office and colored ink storage were located along the south wall of the pressroom on the press operating level. Black ink storage is comprised of four 2 thousand gal. tanks (two of which were existing) stacked two high from the reel room level. Four Tokheim gauges on the reelroom level give an accurate measure of the ink in each tank. The ink piping layout is such that ink can be pumped from any tank to the presses or back to any other tank. Ink going to the presses returns through a pressure relief valve, so that the ink can be kept circulating and be drawn off at the press ink fountains as needed.

Abrasive-filled cast iron plates, matching the existing plates re-used from the old pressroom, were laid on the pressroom floor. Pressroom abrasive plates and supporting structure were designed by Runion Engineers and manufactured locally at considerable savings in initial cost. To prevent transmission of vibration from the presses to the entire building, vibration pads were placed between the pressroom floor supporting structure and the main building framework. The I beams of the floor supporting structure rested on these pads and were not rigidly connected to the building framework, steel angles were attached to the framework on each side of and parallel to the I beams to hold them in correct positions.

An observation balcony, located on the west side of the pressroom, was incorporated into the plans for the purpose of eliminating the possibility of injury to the public and preventing distraction of the pressroom employees from their jobs by visitors during inspection trips in the plant.

The press drive motors and controls were furnished by Cline Electric Mfg. Co. and the control panels were located in a ventilated room at the east end of the pressroom. The pressure in the control panel room was maintained slightly above atmospheric to prevent the infiltration of paper dust and ink mist. Here again Maintenance Supt. C. T. Surber showed his ingenuity by installing storage batteries to supply current to the press tensions in case of power failure and thereby eliminate wrap-arounds. These batteries are kept charged by the motor generator set which normally supplies current to the tensions. In case of power failure the switchover is automatic and the batteries are disconnected from the motor-generator to prevent driving the generator as a motor.

Paper Handling Conveyorized

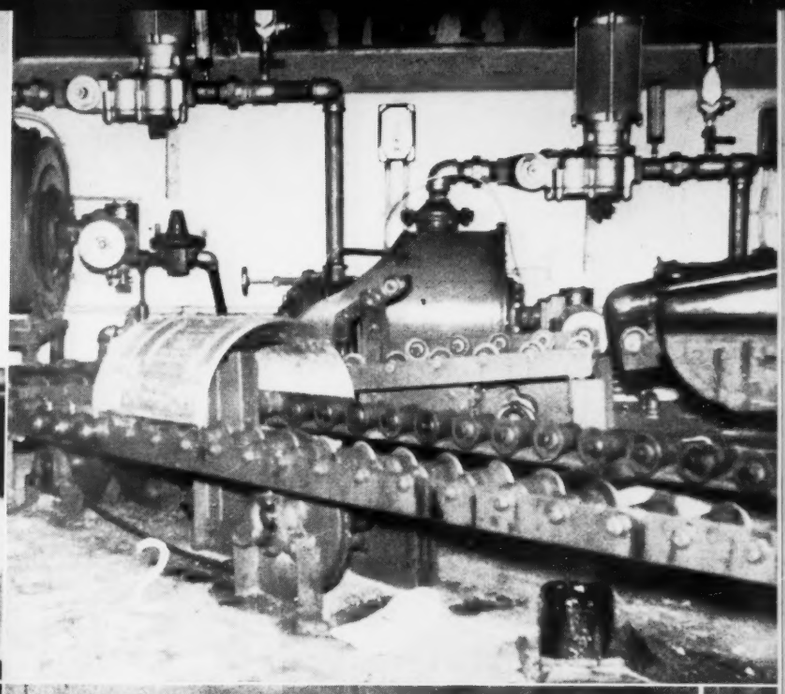
The next step was to get newsprint to the presses. Both levels of the former pressroom were allocated to newsprint storage. This, together with the existing storage area, gave a capacity of over 1200 T. if the rolls were stacked three high on end. For years newsprint was received via a sidewalk chute and manually rolled across the storage floor, lifted by means of a portable electric hoist, and manually rolled onto the stacks. As many as seven men were used inside the building at one time to receive and stack newsprint. Here was an operation where mechanization would pay dividends. Runion had previously been instrumental in getting the power lift truck manufacturers to develop a swivel-type clamp that would permit the truck operator to pick up a roll of newsprint, raise it and revolve it 90 deg., and stack it on end unassisted. The knowledge that this type lift truck was soon to become available was used in selecting the equipment for stacking rolls. In addition, an automatic conveyor system was designed that would transport newsprint from the unloading dock to the storage area or presses, or from the storage area to the presses and back, without the need of manpower.

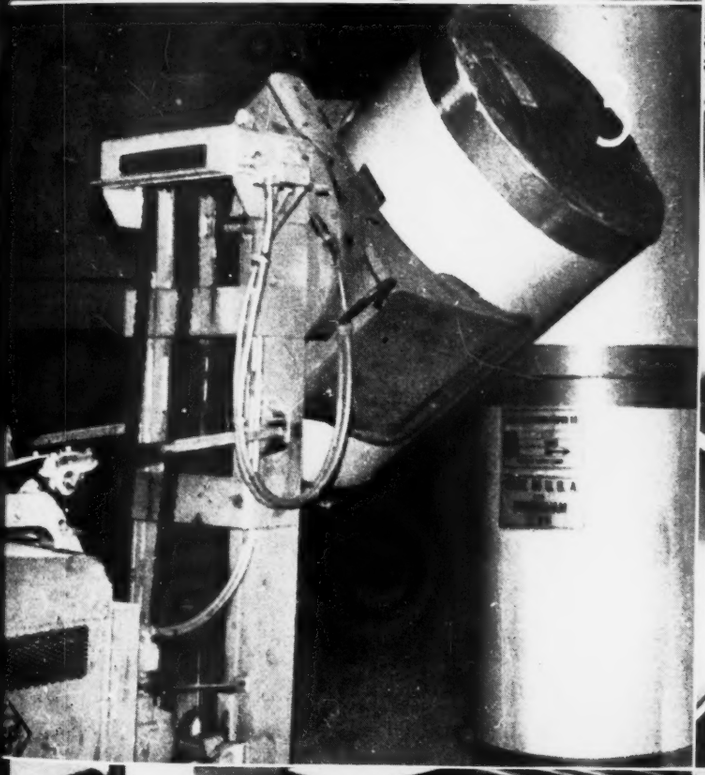
Rolls are unloaded from the delivery truck by the truck driver and checker, and placed on the newsprint drop, which lowers them to the storage floor level. There they are automatically discharged on to a conveyor at reelroom level and, depending on the setting of the controls, are either delivered to the storage area or to the presses. Arriving at the storage area, the rolls are picked off the conveyor by one man operating the swivel gripper clamp of the lift truck, and stacked three high on end for storage. It should be mentioned here that only by stacking on end is it possible to perform this operation with one man and a lift truck. If rolls are stacked on side, either nested or on stringers, two additional men would be needed to break the roll out of the nest or move it along the stringers to a point where the lift truck could grab it.

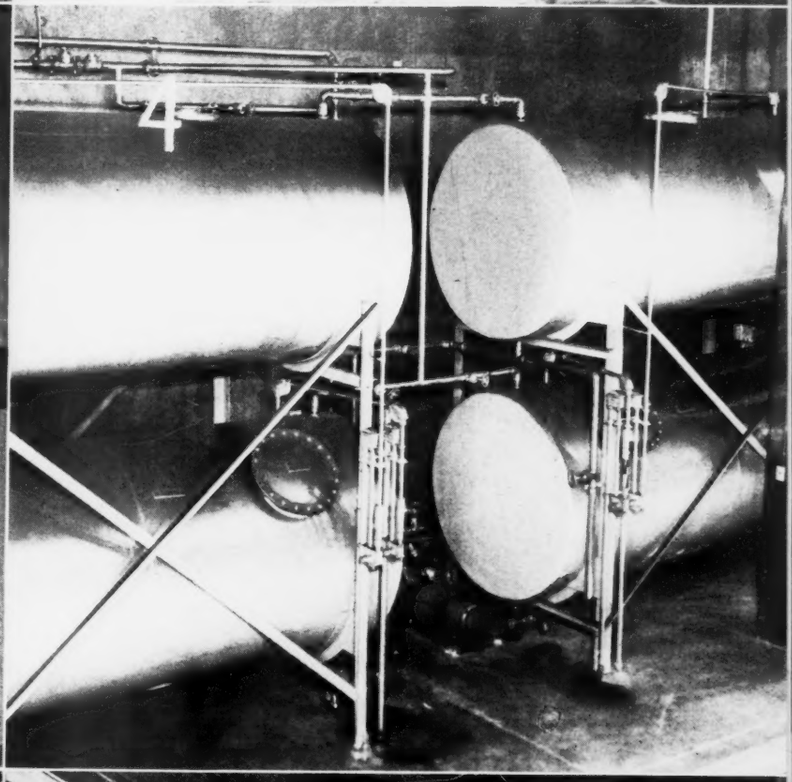
With a different setting of the newsprint conveyor controls it is possible to transfer newsprint from the storage area to the presses. The lift truck operator removes a roll from storage, turns it 90 deg. and places it on the moving conveyor. The conveyor carries it past the newsprint drop which is automatically locked out of operation. From this point, rolls move to the presses in the same way whether they have come from the unloading dock or the storage area. Rolls are carried to the east end of the pressroom, transferred automatically to a turntable which revolves 90 deg. and again transfers the rolls to another conveyor which carries the rolls to the second turntable, and the operation is repeated. The entire operation is completely automatic from the time the roll is placed on the conveyor or the drop until it reaches the conveyor between the presses. When a roll is transferred to this conveyor it is moved forward until it clears the last turntable and then the conveyor stops automatically until another roll is transferred onto it. In this way, the conveyor becomes filled with rolls spotted between the presses. The rolls are manually removed from the conveyor as needed, stripped of wrappings, and rolled into Cline swivel-top dollies. The top of the dollies are flush with the floor. If newsprint is needed for a unit before the conveyor fills up, the pressman causes the conveyor to move the roll to the desired position by pressing a conveniently located push button. After the three conveyors east of the drop are loaded, it is possible to set the controls so that newsprint can be brought from the unloading dock to the storage area while the remainder of the system continues to operate automatically and feed newsprint to the presses. It is also possible, with still another control setting, to return unused rolls from the press to the storage area or the newsprint rewinder.

This conveying system was fabricated and installed by the E. W. Buschman Co., Cincinnati, O. The control system was the result of close cooperation between Runion, C. T. Surber, Maintenance Supt. of the *News*, and Allen-

LAKE ERI
DIRECTOMAT



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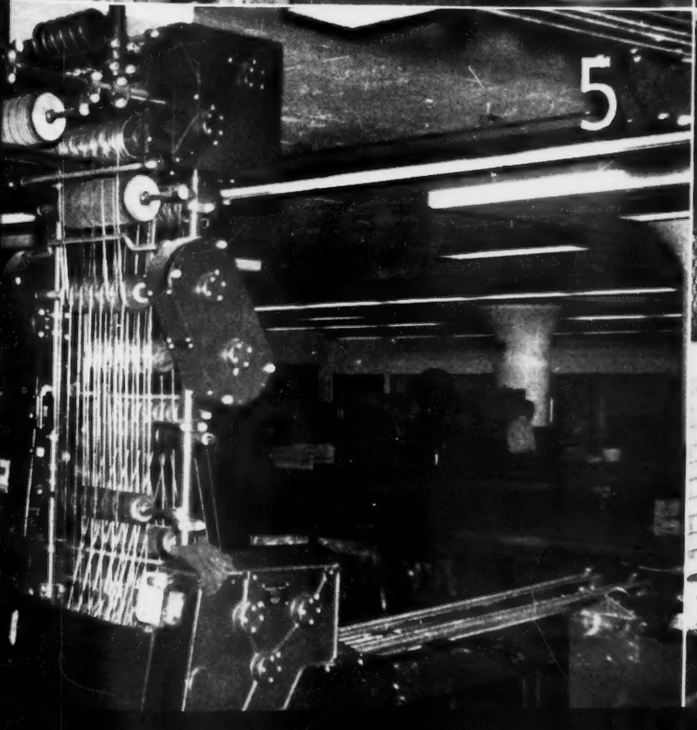
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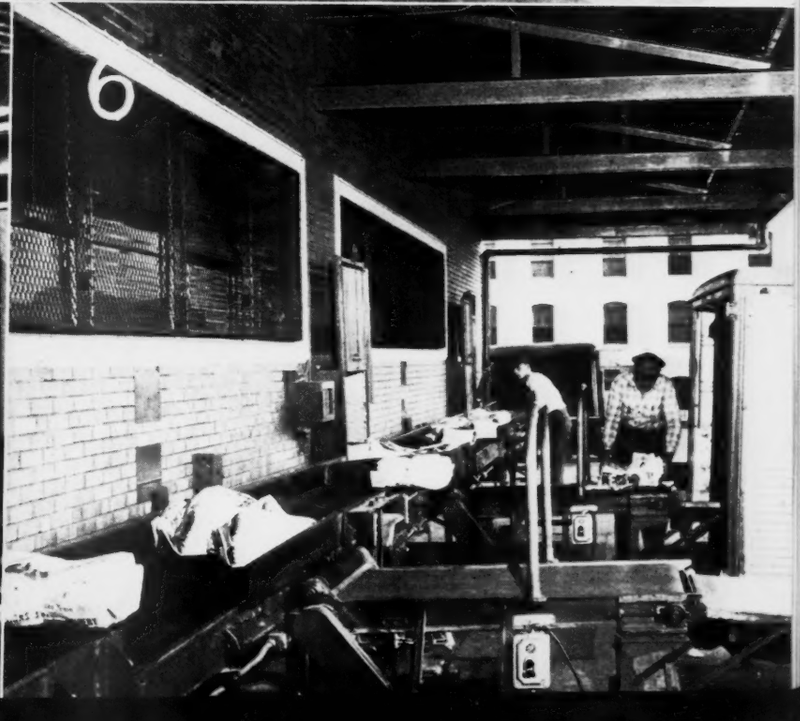
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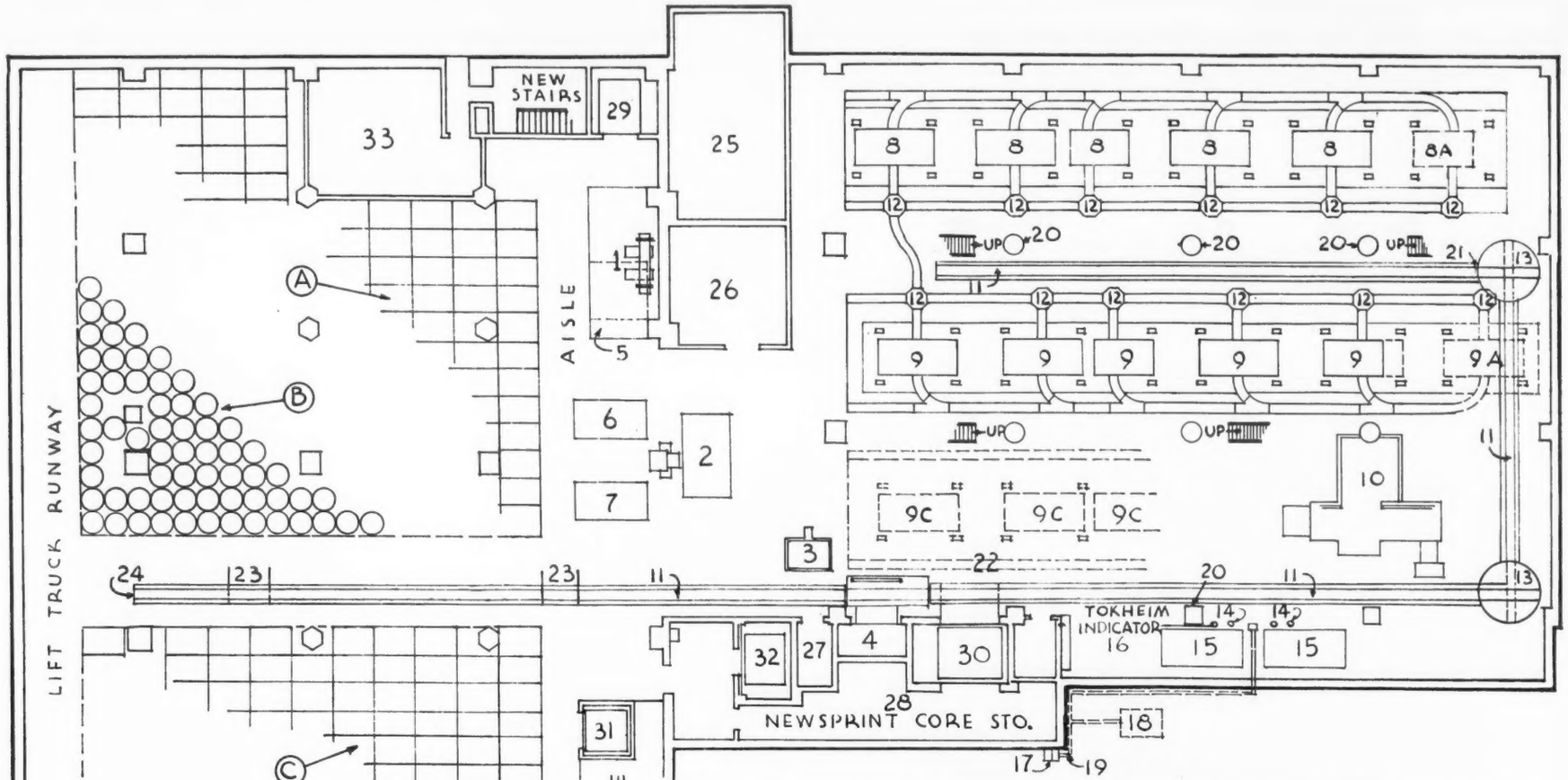


Basement and Reel Room Level—Birmingham (Ala.) News Publishing Company

A—Newsprint storage method No. 1: 40 in. by 66 in. rolls on sides, stacked 4 high on stringers, 476 rolls at 1875 lbs., 446 T.

B—Newsprint storage method No. 2: 40 in. by 66 in. rolls, stacked 3 high on end, 577 rolls at 1875 lbs., 541 T.

C—Newsprint storage method No. 1: 40 in. by 66 in. rolls on sides, stacked 4 high on stringers, 515 rolls at 1875 lbs., 516 T.

D—Newsprint storage method No. 2: 40 in. by 66 in. rolls stacked 3 high on end, 663 rolls at 1875 lbs., 622 T.

1.—Air compressors. (Both compressors elevated 11 ft. above basement level)
2.—Newsprint roll rewinder
3.—Scales
4.—New newsprint drop
5.—Paper cutter below compressors
6.—Paper baler
7.—New paper baler
8.—New 10 unit Goss press
8a.-Future press
9.—Existing 8 unit Goss press
9a.-Future press units
10.—Existing color press
11.—New newsprint roll conveyors
12.—New newsprint roll conveyor control station
13.—New newsprint roll turntables
14.—Ink pumps (2)
15.—Ink storage tanks (2 high)
16.—Tokheim indicators for ink tanks
17.—Ink fill box
18.—Underground kerosene tank
19.—Kerosene fill box
20.—Newsprint roll conveyor
22.—Temporary paper storage area for color press
23.—Conveyor crossover
24.—Limit switch
25.—Transformer vault
26.—Switchboard room
27.—Storage
28.—Newsprint core storage
29.—Existing freight elevator
30.—New freight elevator
31.—Existing passenger elevator
32.—New passenger elevator
33.—Toilet and locker room (upper basement level)

Bradley, who supplied the electrical components. After being in operation for three months, this equipment has reduced the cost of handling newsprint by approximately 60%, and a reduction of 20% in paper waste due to damage, is being realized.

Stereotype and Flat Casting

The relocation of the pressroom necessitated moving the stereotype department in order to provide economical plate transportation between the two. By locating the stereotype department on the fourth floor directly over the west end of the pressroom, not only was this accomplished, but the flexibility and economies effected by locating flat casting adjacent to stereotype were still maintained, and badly needed space was made available for the composing room.

The existing stereotype department consisted of two mat rollers, one large table for mat packing, two formers, two scorchers, an 8 T. immersion heated furnace, two Junior Autoplates, a Heavy Duty Autoshaver, and a Standard Autoshaver used for a stand-by. The plates were manually lifted from the Autoshaver and placed on the pressroom mechanical drop which was of a reciprocating type with a capacity of approximately 2 plates per min. The drop automatically deposited them on the pressroom conveyor which carried them along the length of the press. Formerly, the used plates were dropped down a chute to the basement, where they were manually stacked on skids and returned to the fourth floor via the freight elevator. The slow speed of the plate drop created a bottleneck; and with the addition of the new press, the two Junior Autoplates and the 8 T. pot, did not have sufficient capacity.

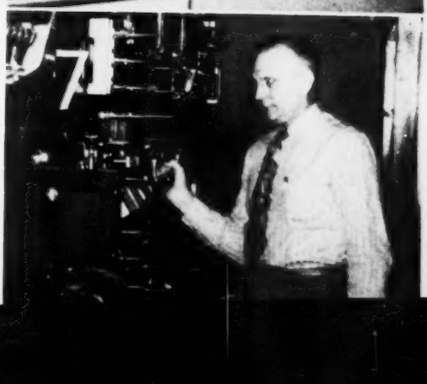
It was decided to replace one of the mat rollers with a Lake Erie 800 T. Direct Pressure Press, in order to take advantage of the faster operation and reproduction afforded by this type of equipment.

The Lake Erie Press has been in operation for over three months and the performance has been entirely satisfactory. Harry Wilson, Stereotype Dept. Foreman, states "I am extremely pleased with the performance of the Lake Erie Press. From the start of our operations in the new plant we have used it for all of our mat-making operations and we expect to continue."

Using suggestions made by Mr. Wilson, Runion provided a small two-man mat packing table (similar to those used at the *Courier-Journal* in Louisville) with the packing strips and moistening roller conveniently located on the sides. Four of these tables replaced the large existing table and greatly relieved congestion at this point.

To give better control over mat shrinkage an Inframatic Drier was installed to shrink the mats before forming.

To take care of the increased demand created by the additional press capacity, one of the original Junior Autoplates was replaced by a Wood Automatic. This, in turn, necessitated replacing the 8 T. furnace with a Kemp pot of 10 T. capacity.



Mechanical Executive Staff Birmingham (Ala.) News Publishing Co.

1.—W. L. Knighton, Production Mgr.
2.—J. M. Calmback, Photoengraving Foreman
3.—Rod Calhoun, Composing Room Supt.
4.—Harry Wilson, Stereotype Foreman.
5.—S. L. (Doc) Sellers, Pressroom Foreman.
6.—George Lawrence, Mailroom Supt.
7.—C. T. Surber, Maintenance Supt.

The stand-by Autoshaver was replaced by a new Wood Heavy Duty type, and a new Sta-hi Former was added to keep pace with the increased casting capacity. Another advantage, though coincidental, of purchasing this new equipment was that it permitted the *News* to set up the new stereotyping department before dismantling the existing equipment.

Runion Engineers designed the stereotype plate handling system to take plates from both Autoshavers and transfer them automatically to the plate drop which is of the continuous double chain type with a capacity of 12 plates per min. The plates are automatically transferred to the pressroom conveyor which is flush with the floor. The pressroom conveyor is comprised of two extended pitch roller chains for the four straight sections which causes the plates to move at twice the speed of the chains. The three 90 deg. curves consist of a universal chain on the outside and free rollers on the inside and are driven from the adjacent straight sections.

Plates pass between the two rows of presses and are picked off by the pressmen in plating the presses. Used plates are placed on the same conveyor and carried around the east end of the pressroom and back to the plate lift located southwest of the presses. Here they are manually loaded on 2 ft. by 3 ft. skids, 20 plates to the skid. The skids are rolled onto the plate lift by means of a jack lift truck and are raised a skid at a time to the stereotype department on the fourth floor. The plate lift consists of a small electric elevator with the fourth floor outlet located at the rear of the stereotype pot, so that skids of used plates can be stored or remelted immediately without disrupting

(*Continued on Page 86*)

Nation Observes 1951 Printing Week

ADVANCEMENT of printing as an art was the general theme of 1951 Printing Week celebrations staged in cities throughout the country the week of January 14-20. Schools, libraries, Graphic Arts plants, local clubs of Printing House Craftsmen, branches of Printing Industry of America, manufacturers, suppliers, local and state governments, bookstores, and affiliated organizations joined together in participation of the national observance.

The few Printing Week observances reported in the following are representative and typical of the many celebrations held by Graphic Arts and civic groups throughout the United States.

San Francisco Observance

Under the general chairmanship of Harold G. Pond, Sales Manager for the Harry W. Brintnall Co., San Francisco noted the 245th anniversary of Benjamin Franklin's birth by honoring the 14,000 Bay Area printers. Speaker at meetings of the San Francisco Club of Printing House Craftsmen and Dept. of Journalism, University of California was J. Homer Winkler, Technical Director, Battelle Memorial Institute.

TOP LEFT—Here is pictured one of the displays of printed material exhibited during San Francisco's Printing Week. Displays of similar nature appeared in the various libraries, newspapers, retail stores, theatres, bookstores and printing plants in the Bay Area.

Detroit Honors Means

At a dinner attended by more than 550 Graphic Arts executives in observance of 1951 Printing Week, Detroit Craftsmen honored C. C. "Cy" Means, General Manager, Graphic Arts Assoc. of Michigan, by presenting him with the third annual Award of Recognition. Robert Knox, President of the Club, presented the award to Means for establishing Detroit as a printing center.

TOP CENTER—Feature of the meeting was a demonstration of colonial printing on the Ramage Handpress by members of the Detroit Young Executives of the Graphic Arts. Officers of the club pictured from left to right are: Martin J. Struhar, President, reading a copy of The Michigan Essay, October 31, 1809, reproduced on the Ramage Handpress; Richard A. Green, Vice President; George Langlet, Printing Service, Inc.; and Richard C. Burkhardt, Secretary.

Cleveland Craftsmen Participate

Printing Inks, An Art or a Science was the subject of the technical discussion presented by Walter Surgeon, Midwest Technical Director of Sigmund Ullman Co., before a meeting of Cleveland Craftsmen commemorating Printing Week. In addition, the Cleveland public was treated to an exhibit of letterpress and offset procedures under the joint sponsorship of the Chandler and Price Co. and Harris-Seybold Co.

TOP RIGHT—Here is shown one of the display cases of printing exhibited at the Cleveland Public Library the week of January 14-20. The Business Information Bureau of the Cleveland Library also issued a list of books and periodical publications available on the Graphic Arts.

New York's Program

More than 3500 representatives of New York printing, publishing and associated Graphic Arts organizations joined city officials, educational groups, advertising and consumer associations and metropolitan service clubs in presenting a cooperative Printing Week program. It was estimated by A. F. Oakes, President of the New York Employing Printers Assoc., Inc., that 25,000 persons participated in the functions that week.

BOTTOM LEFT—During Printing Week ceremonies, New York's Printing Teachers Guild presented Harris-Seybold Co. with an award for Encouragement of the Graphic Arts. Left to right are: David Teichler, retiring Guild president; Ted Broadston, Harris-Seybold New York Sales Manager; Robert Cynar, 1951 president of the Guild; and Harry A. Porter, Sales Vice President, Harris-Seybold.

BOTTOM CENTER — Selection of movie star Ruth Roman, as Miss Printer's Devil for 1951 was made by the International Assoc. of Printing House Craftsmen and Printing Industry of America. Miss Roman learns about printing from Gordon Holmquist (center), Intl. Second Vice President, and A. R. Tommasini, Intl. Public Relations Chairman.

Washington Printing Week

Graphic Arts groups in the nation's capital combined in the observance of Printing Week and heard Col. E. W. Palmer, President of Kingsport Press, and Edwin R. Butler, Asst. Managing Director of the American Forest Products Industries, Inc., in two separate addresses.

BOTTOM RIGHT — Heritage of Printing is the subject of an oil painting now hanging in the main building of Ransdell, Inc., Washington, D. C. The painting was unveiled by E. A. Merkle (right), President of Ransdell, and executed by Floyd Greene (left), Art Director at Ransdell.

NPA
Printing and Publishing Division

DONALD G. SHOOK, Publisher of a weekly newspaper and commercial printing plant in Media, Pa., has been selected Acting Director of NPA Printing and Publishing Div. Col. E. W. Palmer, President of Kingsport Press, Kingsport, Tenn., has been appointed Consultant to the Division. Both of these executives were connected with WPB Printing and Publishing Div. during World War II.

John V. McCarthy, Dept. of Commerce executive, previously had been in charge of the NPA Div., but will remain in an administrative capacity as Assistant to Acting Director Shook.

The Printing and Publishing Div. is being organized to secure men to head the product sections and to secure consultants for each.

Changes Zinc Inventory

Those newspaper and commercial photoengraving plants having on hand inventories of 16 ga. zinc photoengraving plate stock may consider them as 18 ga. plates so far as inventory purposes are concerned. A temporary interpretation of NPA Zinc Order M-15 was made recently to this effect during the latter part of January by the National Production Authority.

According to the interpretation, 16 ga. zinc furnishes 75 per cent of the printing surface of 18 ga. zinc. Thus, each 100 lbs. of 16 ga. zinc may be considered as 75 lbs. when figuring inventory and usage by weight.

The transformation of present inventory of 16 ga. zinc is being permitted by NPA to avoid waste and to eliminate the necessity of shipping the 16 ga. metal to be re-rolled into 18 ga. plate stock.

Use of Tungsten in Ink Pigments Prohibited

According to NPA Order M-30 (issued January 22) the use of tungsten in the manufacture of printing and lithographic inks is prohibited after March 1, 1951. Tungsten compounds (tungstates) are compounded in making inks to make the colors fast to light, resistant to certain solvents and to prevent color dyes from dissolving or bleeding in water such as would occur in the dampening mechanism of offset-lith presses.

Ink Elements

Previously announced, the manufacture of bronze inks is prohibited after March 1 under NPA Order M-12. Cobalt driers, however, under amendment, are permitted to be used in printing inks.

Greer's New Connection

Robert Royden Greer, printing engineer, specializing in plant layout, production and management, recently passed the California state real estate board examinations and is now associated with the Wm. E. Doud Co., 5201 Wilshire Blvd., Los Angeles, as Manager of the Industrial Div. He will handle, in addition to his engineering activities, leases, sales, exchanges, etc.

Mid-Atlantic Conference

Plans for the joint Mid-Atlantic Mechanical Conference of the Pennsylvania Newspaper Publishers' Assoc. and the New Jersey Press Assoc. have been completed, according to Conference Chairman Ralph R. Cranmer, Business Manager, Williamsport (Pa.) *Grit*. The conference will be held April 5, 6 and 7 at the Abraham Lincoln and Berkshire Hotels in Reading, Pa. Vice Chairman of the mechanical committee is Herbert G. Taylor, Mechanical Supt., Bethlehem (Pa.) *Globe-Times*.

Registration for the conference will open on April 5 as will the manufacturers' and suppliers' exhibits. The smaller city newspaper and composing room sessions will be held on April 6. A dinner meeting and entertainment will be provided on the Friday evening by the manufacturers and suppliers. A combined pressroom and stereotype session is scheduled for April 7. The Saturday luncheon will feature an address by J. Homer Winkler, Technical Advisor, Battelle Memorial Institute, entitled *A Look Ahead for Newspaper Mechanical Production*. The photography and photoengraving session will be held on Saturday afternoon.

Chairmen and co-chairmen of the various sessions are as follows: Smaller City Newspaper Problems, William C. Jones, Mechanical Supt., Salem (N. J.) *Sunbeam*, and George F. Martin, Composing Room Foreman, Ridgway (Pa.) *Record*; Composing Room Session, Claude E. Schell, Composing Room Foreman, Reading (Pa.) *Eagle-Times*, and Victor D. Shanahan, Composing Room Supt., Jersey City (N. J.) *Jersey Journal*; Press-Stereotype Session, Rudolph Kuhner, Pressroom Supt., Sharon (Pa.) *Herald*, and Charles Bowen, Stereotype Foreman, Philadelphia *Inquirer*; Photography and Photoengraving Session, R. Wayne Schrott, Manager, Conemaugh Engraving Co., Johnstown, Pa., and Walter Metz, Photoengraving Supt., Harrisburg (Pa.) *Patriot-News*.

Carbon Tetrachloride Substitute

(Abstracted from the Safety News Letter Issued by the Printing and Publishing Section, National Safety Council, January 1951)

THE use of carbon tetrachloride has been outlawed in some plants and in its place several solutions have been substituted. It has been found that Stoddard solvent works in 90 per cent of the cases. For the other 10 per cent, trichloroethylene is used. By using a combination of the two, it has been found that the carbon tetrachloride problem can be licked and you can still do a better job of cleaning. Carbon tetrachloride is not too satisfactory, but since it evaporates fast the men like it. A recommendation for the safety code in the State of Indiana states that companies should label dangerous chemicals and keep them in the proper containers.

Comet Sent By Plane

After a fast trip by plane from New York to the composing room of the Miami *Herald*, Linotype's Blue Streak Comet line-composing machine became part of the network of men and machines which reported the New Year's Day Orange Bowl football game. The Comet was linked by private wire to the stadium press box where the *Herald* sports staff transmitted a play-by-play account by Teletypesetter tape perforated by remote control from the press box. Comet operating speed was reported to be 12 lines per min. The Miami *Herald* operates one of the largest Teletypesetter installations in the world.

Monomelt Open House — Al Anderson (right), Bemis Bag Co., demonstrates his Bakelite Spray Gun technique to Chesley F. Carlson, Sales Manager of The Monomelt Co., at the open house held recently by Monomelt to celebrate the opening of the company's new Bakelite Matrix Material Processing plant. W. H. F. Thompson, Monomelt Vice President, explained the process to the guests and demonstrations were held showing the various steps of processing the Bakelite Matrix Material.

Equipment & Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT *Engineer*, 1276 West Third St., Cleveland 13, Ohio.

Pyrometer Equipment Announced

PYROMETER equipment, which is claimed to offer accurate temperature indication, close temperature control of and protection for furnaces and ovens, has been announced by General Electric's Meter and Instrument Divisions. The complete line consists of flush or surface-mounted indicators, controllers and protectors.

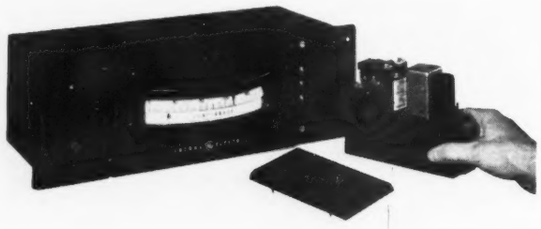
Designed for industrial applications in the printing and other industries including melting furnaces and plastic molding machines, the instrument has a calibrated accuracy within ¾ of 1 per cent of full scale. A legible 7 in. scale, fitted with anti-glare cover, indicates any change in temperature equivalent to 1/10 of 1 per cent of full scale. Immediate control action follows. Normal changes in humidity, ambient temperature and voltage have little or no effect on the exactness of the control action.

The heart of the indicating instrument is a 3¼ lb. magnet, which provides higher flux density and allows larger air gaps than are found in conventional instruments.

The indicating device is a millivoltmeter connected to a thermocouple on the furnace or other heating equipment. The difference between the hot and cold junctions of the thermocouple causes small voltages. These voltages, being proportional to the temperature, are indicated on a scale marked in Fahrenheit or Centigrade.

The Type HP-3 controller provides On-Off action of the final control element by either a relay, mercury switch, or a contactor through which electric power is supplied to the furnace or oven.

The pyrometer protector, a separate form of the HP-3, is usually used in conjunction with and to protect against the possible failure of a separate precision controller.



In this view of the G-E Type HP-3 Pyrometer Controller, the hand is drawing out the removable control unit.

Metallic Printing Ink

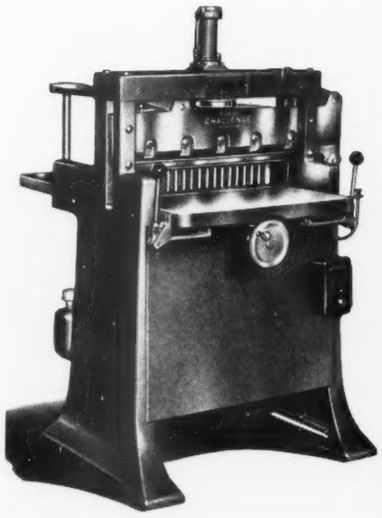
A METALLIC printing ink which, the sponsor claims, dries to a hard, permanent surface and does not rub off despite constant handling, is based on Vinylite resins, reports the Bakelite Div., Union Carbide and Carbon Corp. Both outer covers of the January 1951 issue of the *Reader's Digest* are printed in silver effect with this ink made by Sinclair and Valentine Printing Ink Co. It was stated that the Vinylite resins provide exceptional affinity to paper for a metallic ink, high gloss, and resistance to fading and aging. The covers of the *Reader's Digest*, on which magnified snowflakes were reproduced by a reverse plate process, printed by Beck Engraving Co., Philadelphia, were also treated with an offset spray.

Consolidated Booklet

CONSOLIDATED Photo Engravers & Lithographers Equipment Co. has issued a 32 page booklet containing illustrations and explanations of Consolidated equipment, design developments, policy and production. Brief descriptions of each item of equipment are accompanied by a picture of the machine or instrument. Consolidated's Revolving Copy Board, Positive Holder, Re-register Device, 3-Point Register Bars, Monorail Lamp Carriers, Light-Tight Rear Case, 3-Way Lens Turret and Flash Lamp, Automatic Selsyn Diaphragm Control, and Step and Repeat Automatic Camera Back, are the design developments mentioned in the booklet for darkroom cameras.

Improved Paper Cutters

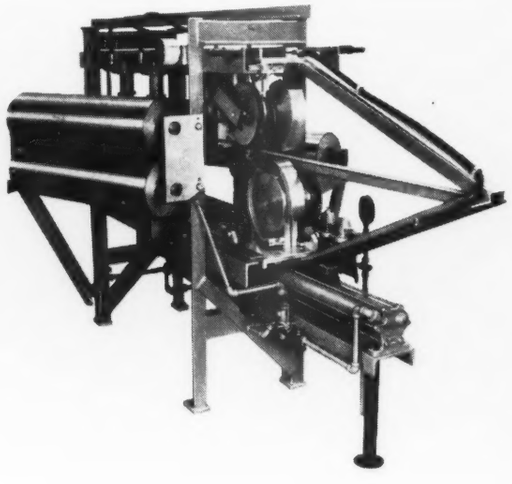
IMPROVED design and operation of Challenge Styles 265 and 305 Power Paper Cutters, have been announced by The Challenge Machinery Co. The appearance of the machines has been altered by partially enclosing the base and the operation has been modified by putting all controls above the table.



Improved hydraulic power model of the Challenge Style 265 Power Paper Cutter. Machine has been designed to put the controls above the table.

On the hydraulic power model, the lever at the right of the table moves the clamp up and down and the lever at the left controls the knife, but must be used in connection with the pull-up button at right. The operator must use both hands and has control of both the clamp and the knife throughout the cutting cycle. Operation of the hand clamp model is essentially the same except that the clamp is run up and down by a six-spoke hand wheel. The two models are each built in two sizes: 26½ in. (265) and 30½ in. (305).

Automatic Butt Splicer— **An Automatic Butt Splicer for web-fed paperboard presses, which the sponsor claims will make a butt splice without stopping the press, has been developed by Ford Instrument Co., Div. of The Sperry Corp. The Sperry Butt Splicer fixes tape on both sides of the web using standard 2 in. pressure sensitive tape. It is designed to operate with all makes and sizes of web paperboard presses up to 46 in. wide.**



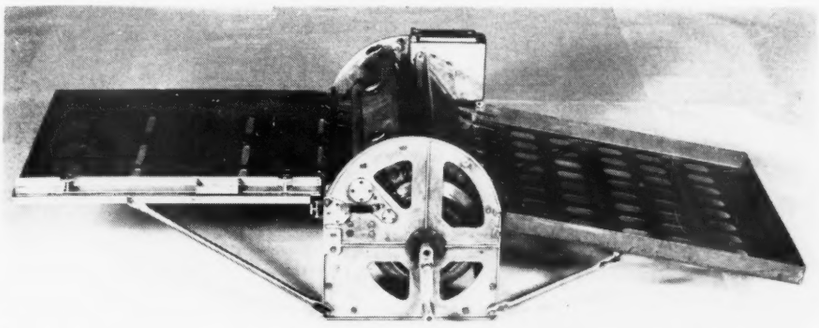
Map Reproduction Machine

A 22 in. by 29 in. Spirit Duplicator, capable of producing multi-colored maps, map overlays, overprints and miscellaneous sketches and diagrams, has been developed at the Engineer Research and Development Laboratories.

Hand operated and friction fed, the Duplicator is a spirit process type machine designed for printing four colors on paper up to 22 in. by 29 in. Special color carbons of purple, red, blue and green are used in drafting a master copy, which is then placed on the machine's revolving cylinder. Paper is fed through spirit dampened rollers before contacting the master copy under pressure and is then delivered to the receiving chute in finished form.

It is reported the machine has been operated satisfactorily under temperatures of plus 25 deg. F. and plus 130 deg. F. Under normal operating conditions of 75 deg. F., it has produced 200 copies of map overprints on high wet-strength map paper and 100 copies of map overlays on map overlay paper. It is capable of an accuracy of register within 1/32 in. according to the sponsor.

The complete operating unit, including accessory equipment, supplies and carrying chests, weighs 468 lbs. The spirit process employs alcohol as the dampening medium to transfer the image directly from the master copy onto the copy paper. In preparation of the master copy, a dye original negative (from right to left reading) is prepared by typing, writing or drawing on a sheet of master paper backed up by the Spirit Duplicator process carbon paper.



The 22 in. by 29 in. Spirit Duplicator designed for reproducing multi-colored maps, map overlays, overprints, and miscellaneous sketches and diagrams. Alcohol is used in the machine as the dampening medium to transfer the image directly from the master copy onto the copy paper.

Doyle Radiant Electric Heater

THE J. E. Doyle Co. Radiant Electric Heater for quick drying of printed sheets is designed for use on printing presses ranging in size from 22 in. width up to and including 72 in., or even greater width if desired. The Heaters consist of specially fabricated G-E Calrod tubular heaters mounted in a suitable width reflector above the delivery end of the press in fixed position.

The Heaters can be supplied for use in connection with either 220 v. or 110 v. a.c. or d.c. Control of the amount of heat emitted from the elements is governed by a manually-operated three-heat snap switch for high, medium or low temperature. A device for shutting off the current to the elements when the press is stopped and for automatically throwing the current into the elements when the press is started again, is available.

The surface temperature at each unit on the surface is 1230 deg. The units are positioned approx. 4 in. above the sheet when the Heater is mounted between the delivery chains. On the particular Heater shown on a Miehle No. 41 two-color machine in the accompanying illustration, there are two G-E Calrod tubular elements rated at 2500 w. each. The elements, sheathed in Inconel metal, are formed hair-pin fashion, with the terminals for each of the two elements at opposite ends of the reflector. The re-reflector is made of polished aluminum.

A fixed aluminum insulator lined with asbestos is fastened in horizontal position above the ink plate and rollers. The insulator replaces the usual fibre board shield to keep dirt and-or paper particles falling into the ink distributing mechanism.

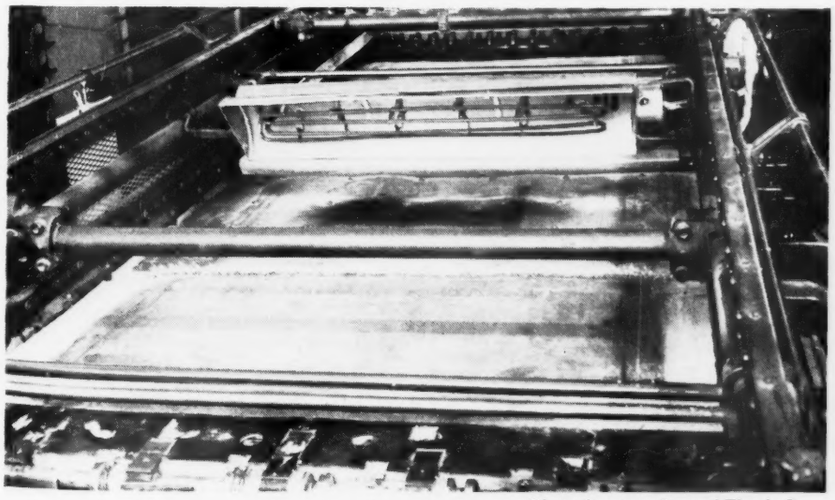


Photo Courtesy General Electic Co.

Sectional view of Miehle No. 41 Two-color press at delivery end to show application of Doyle Radiant Electric Heater between delivery chains. The reflector has been tilted upwardly to show G-E Calrod tubular heaters.

Production and Mechanical Executives are invited to submit to the editor informally in a letter devices which have helped production in their plants.

Koloroid Process Booklet

HOW To Make Koloroid Proofs is the title of a booklet recently issued by Consolidated Hammer Dry Plate & Film Co. to explain the Koloroid Color Proofing Process. Containing 24 pages and numerous illustrations of the steps involved in the process, the booklet lists various uses of the Koloroid process in photoengraving, lithography, gravure, silk screen, and photography. The booklet is divided into six chapters including: Koloroid materials and their uses; Equipment and accessories needed to make Koloroid proofs; Making of Koloroid ink chart; Making a set of four color process Koloroid proofs; Important points in the process; and How you can use Koloroid to good advantage. Four samples of the Koloroid pigment papers are included in the booklet.

Photo Lamp Data

ISSUED as a guide for professional and amateur photographers is the revised bulletin entitled *G-E Photo Lamp Data*, published by General Electric's Lamp Dept. The bulletin contains complete new tables providing the correct photographic exposure when using G-E photoflood and photoflash lamps. The new values listed call for more exposure than was previously recommended. The tables are more detailed than previous ones in listings of film speed ratings and shutter speeds, and also give guide numbers for both polished and satin-finished reflectors. In addition, the bulletin includes a table of the latest film speed ratings, a revision of G-E photoflash time-light data, and listings of 3200 deg. K. and 3350 deg. K. lamps for color photography.

Chrome Plating
Electrotype and Stereotype
Printing Plates

By AXEL LUNDBYE*

**Research, Kable Printing Co., Mount Morris, Ill.*

II.

Curved Plate Anodes

In Fig. 4 is a picture of the anodes for the curved plates. The curvature is usually 3½ in. by 4 in. larger than the plate cylinder. That is to say, when the printing plate is curved to a 14 in. diam. cylinder, the radius for the anode is then 10½ in. or 11 in., or the diameter will be 21 in. or 22 in. This distance should be held on the whole curvature of the plate to the anode. However, the anode should extend approximately 3 in. beyond the largest plate and should extend about 1½ in. above and below the size of the plate. The anode is made up of 0.110 in. backing metal on which there are punched holes ⅝ in. round approx. 1¼ in. center to center both ways. Then a frame is made up of copper bars to hold the anode and cathode in proper position in the tank during the plating cycle.

Cathode or Plate Holder

The cathode holder or plate holder was first made up of copper plate ¼ in. thick but due to the weight, especially for a double spread, it became very heavy and therefore, an aluminum sheet was used and the test proved that as good, if not better, result was obtained than with copper. Now, that can be explained in many ways because it was easier to get a good permanent curve on the aluminum and undoubtedly we get better contact between the back of the plate and the aluminum cathode. However, a couple of tests might be interesting to put down here. The aluminum used was R301-0 and it was 0.156 in. thick. Here are some interesting results which we obtained with the two materials used for the hangers or plate holders:

Material	Amp.	Voltage	Amp. per sq. in.	Plate size	No. of sq. in.
Al	1600	12	6	17½ in. by	266
	700	6½	2.64	15¼ in.	
Cu	1450	12	5.8	16¾ in. by	250
	650	6½	2.6	15 in.	
Al	1625	12	6.1	17½ in. by	266
	700	6¼	2.64	15¼ in.	
Cu	1450	12	5.8	16¾ in. by	250
	650	6½	2.6	15 in.	

It will be noticed from the test in the above table that under the plating conditions and the contact which they had with the plates on these hangers that the aluminum hangers carried more current per sq. in. of area than the copper hangers.

The printing plates in which we were interested in chrome plating were used for printing *Life Magazine*. These plates are expected to give us a final impression of 1,900,000 without any appreciable loss of printing quality. These plates have a final thickness of 0.240 in., have a 1½ hr. nickel shell and a 3 hr. copper shell, and then, of course, are backed up with a standard electrotype metal.

Plates Must Be Clean

The first step in chrome plating, of course, is to clean the electrotype—and I mean clean it absolutely clean. I could even say chemically clean, because if it is not clean, plating failure is sure to occur. When the electrotype is received from the proof press, the ink is cleaned off with a good solvent to remove the ink totally and completely. Then it is submerged in a hot caustic soda bath (potassium hydroxide 20 to 25% solution) at approx. 100 to 120 deg. F. and when removed from the bath after about 10 min., it is scrubbed with a brush and hot water. The operator should use rubber gloves in this operation. After the plate is scrubbed, it is blown off with low pressure live steam through a jet. Then the electrotype is ready for placing in the plate holder, and as stated earlier, to cut the weight aluminum is being used to make the plate holder.

Squaring Plate in Holder

In Fig. 4 it will be noticed that metal support is provided on two sides of the plate holder so the plate can always be lined up square. On the third side there are some movable beveled pieces fastened into position to the size of the plate by means of wing nuts. Of course, some slots must be provided in the plate holder so that the wing nuts can be moved forward or backward. On the fourth side there is a screw arrangement similar to the arrangement used on a routing cylinder so the plate can be fastened and clamped into the holder to be absolutely sure of contact on all sides.

Water Breaks

After assembly of the electrotype plate on this hanger, it is ready for a cold water rinse to see that no water breaks occur in the plating area. Should a water break occur, the plate can be washed with a halftone brush and French chalk and then again rinsed with cold water. Now the whole assembly, as seen in Fig. 4, is placed on the proper bars and the current is turned on by the generator, or a rectifier, whichever is being used. However, I prefer a generator set when chrome plating.

Voltage-Amperage

The voltage should start at approx. 12 v. and if everything is correct a current demand of approximately 6 amp. per sq. in. of hanger surface, that is when using 12 v., should be registered on the ammeter. Assuming that we have a hanger with an area of 100 sq. in., then the ampere demand should be 100 x 6 or approx. 600 amp. After 15 sec. at 12 v. and approx. 6 amp. per sq. in., the rheostat is turned back so that the voltmeter registers only 6½ v. and it is left there for 1¼ min. At this voltage, the ampere demand should be approximately 2½ amp. to the sq. in. After the plating is over, that is 1½ min. have gone by, the whole assembly is removed to the dragout tank to wash off as much of the plating solution as possible. Then it is put under running warm water and the plate is removed from the holder and allowed to dry. It is now ready for the printing press and should be good for approximately 2,000,000 impressions on a high-speed rotary press—color printing at about 800 f.p.m.

Many times when an electrotype is to go to the foundry in a hurry, the nickel face can be dispensed with and 1½ to 2½ min. of chrome direct on the copper can be substituted.

Fig. 4. — Illustration shows anodes for curved plates. Anode is made up of 0.110 backing metal with ⅝ in. holes punched approx. 1¼ in. center to center both ways. Cathode or plate holder was first made up of copper plate ¼ in. thick, but due to weight, the holder was constructed of aluminum sheet.

Fig. 5.—Two ceramic tanks contain water and hydrochloric acid in ratio of 1:5 of water. Bath is used to remove unsatisfactory chrome plate.

Dragout Tank

The dragout tank can be any kind of a container—sheet-metal, wood, or the like. However, no brass or copper should be exposed to the solution. The assembly is dipped into this water so as to conserve the dragout liquid; that is, so chromic acid adhering to the plate and holder can be conserved. As it is necessary each morning before starting plating to fill the plating tank up to the proper level, this liquid is valuable for that purpose, because we will now keep much of the salt and sulfate in the solution without the addition of new salt or sulfate.

Holding Down Trivalent Chrome Build-up

The anode as a rule should be larger than the cathode. This will hold down the build-up of the trivalent chrome. The chromic acids should be in a ratio 100:1 to the sulfate. That, of course, is only figuratively speaking, because what is meant by chromic acid analytically is nearly impossible to determine as free chromic acid. What is generally meant is the total hexavalent chromium and under the condition where hexavalent chromium is considered, the ratio 100:1 is correct; providing that by sulfate we mean the sulfate irons or what is worth the same thing, sulfuric acid. Should we, however, want to determine the free chromic acid and make the ratio free chromic acid, then the ratio would probably be much closer to 80:1. But, as stated, it is nearly impossible to determine the free chromic acid, therefore, we mean that the ratio 100:1 chromium trioxide to the sulfuric acid.

Cathode Efficiency

The cathode efficiency in such a bath is only approx. 12%, which, of course, is very low. As to the temperature, we have stated that it would be necessary to use 130 deg. to 140 deg. F. The more we increase the temperature, we decrease the throwing power and reduce the cathode of efficiency and therefore the speed of plating. If we go far enough, we will finally get up to the point where no deposit at all is obtained. By decreasing the temperature too much, we get a frosty and eventually a burned deposit. However, the lower temperature also increases the throwing power. We could use a temperature of 100 deg. F., but when we get down to that range of temperature, it becomes very tricky to handle. Therefore, we try to stay away from it. We have also stated that we like to work at approximately 2 to 2½ amp. to the sq. inch, when we plate at 6 to 6½ v. By increasing the current density, we also increase the throwing power and the cathode efficiency at first, but further increase in the current density produces a frosty and finally a burned deposit. Too much decrease in the current density produces a milky deposit. But by combining increased current density and higher temperature it becomes more easily possible to obtain a good throwing power and bright deposit and a very nice looking chrome deposit. In other words, the whole art of chrome plating is really a compromise between current density and temperature and the experience of the operator. The operator's experience can only be obtained by trial and error.

A final word about the current density. The throwing power which is always poor in chrome solution appears to be better on porous than on rough surfaces.

Caring for Anodes

Now, regarding the anodes. After they have been used for some time, they become coated with a layer of lead peroxide, especially if they are left for some time in the plating solution when no current is passing through—say overnight. They will become almost yellow and the resistance of the oxide will increase the trivalent chrome content of the solution and consequently it will build up. The anodes should be removed from the bath after the day's plating is finished and scrubbed clean with a stiff brush.

Another thing to be remembered: Chromium will very rarely deposit at less than 3 v.

Anode Troubles

Some trouble with anodes might easily be traced back to bad connection of contact between the anode rod and the anode itself. Impurities such as iron and copper will cut down the conductivity of the solution, but are not detrimental for the plating as long as they are held below 10 grams per liter. Copper is a little more detrimental than iron, but again as long as it is kept below the above-mentioned limit, no difficulty should be encountered in plating. However, it is a very good idea to keep copper, iron and steel coated with a resist when it becomes necessary to submerge them in the plating tank. This applies especially to copper.

Recognizing Various Troubles

We will set down a few troubles which can occur in the use of the chrome plating solution and the chrome plating operation.

Assuming we have a defect such as work only partly plated, the causes could be insufficient current due to insufficient power supply or most likely it would be a bad contact. Or it could be a yellow, non-conducting coating on the anode due to the anode being in the solution without being cleaned off, or it could be the solution is low in sulfate. Now, the sulfate can be increased if it is too low

$4.47—An Excellent Record

(Abstracted from an address delivered at the Annual Convention of the Intl. Assoc. of Printing House Craftsmen, Chicago, September 1950, by Lester S. Crowl, President, The Blade Printing and Paper Co., and the Blaco Advertising Agency, Toledo, O.)

THE following cost ratios were issued by the Printing Industry of America a couple of years ago for job printers doing an average amount of volume. Figure that every dollar of sales is 100 per cent. The materials used in those plants came to 36.73 per cent. The fixed expenses of those plants, rent, taxes, depreciation, came to 3.82 per cent. The current expenses of the factory, wages, direct supplies, packing, shipping, delivery, light and power, spoiled work, and other taxes except income taxes came to 33.20 per cent. So the total cost of the goods sold before any administrative or selling expenses came to 73.75 per cent, leaving a gross profit on each $100 worth of business, $26.25. Out of this $26.25 have to come the administrative expense, general office and executive salaries, office salaries, charge-offs for bad debts, and social security taxes paid by the employer which amounted to $10.17, and then selling expenses totalled $8.92 for a total of $19.09, which left $7.16 as the net profit before income taxes. The federal income tax figured 38 per cent across that line came to $2.76, leaving as a net profit after taxes $4.47 on each $100 worth of business. Now, $4.47 worth of profit, or 4.47 per cent is a very low percentage of profit as compared to industry on the whole, and yet in the job printing classification, it is regarded as an excellent record.

by adding a small amount of sulfuric acid. Or should the sulfate content be too high, barium carbonate or barium hydroxide can be added. Another reason for work only partly plated could be that the trivalent chromium concentration is too high. There is a possibility also that we might not have enough holes in the anode and some of the gases have been trapped. It could also be a partial passivity of the nickel face. Of course, that can be overcome by washing the part that would not take the chrome with a solution of 10% to 20% sulfuric acid. But it must be remembered if that is done, it must be washed very, very thoroughly, otherwise when it goes back into the plating solution the content of the sulfate might be increased if it is done too many times in succession. Another reason for poor plating can be poor throwing power. This can be due to the fact that the temperature of the solution is too high or the starting voltage is not high enough, or of insufficient duration, or the plating current could be too low. But in case it is followed as described in the article, that will never occur. Or the concentration of the chromium trioxide is not high enough. However, that can easily be checked with a Baume reading. Below is a table which will indicate what the Baume reading should be at 60 deg. F. for different concentrations:

Conversion of Degrees Baume to oz. 1 gal. of chromic acid

Baume	oz-gal. CrO_3
20.5	31.5
21.5	33.3
22.5	35.1
23.5	37.1
24.5	39.1
25.5	40.9
26.5	42.9
27.5	45
28.5	47.1
29.5	49.2
30.5	51.5
31.5	54
32.5	56.3
33.5	58.7
34.5	61.2

Should the color of the solution turn to a grevious brown color, then we know the trivalent chromium concentration is too high. If we get a milky deposit, the current density is too low, or the temperature is too high, or the trivalent chromium concentration is too high, or we have too much iron in the solution. If the deposit is frosty and dull and burned over large areas, then the current density is too high or the temperature too low, or the trivalent chromium concentration is too high. If the edges of the plate are dull and frosty or burned, then we know that the current density is a little too high during the striking and-or plating, or the temperature is just a little below where it should be. If we get a milky deposit, we have insufficient current or the trivalent chromium concentration could be too high, or the deficiency could be due to chloride contamination. Should we get brown streaks in the plate, then we know we have insufficient chromium trioxide in our bath.

Now, this little article is superficial regarding the novice with respect to chrome plating bath, experiences and results. Should all details be covered completely, it would take many times the amount of space used here to explain what is going on.

Now, just one more thing before closing. Should we get some plates which are not plated to our liking, the chromium can quite easily be stripped without any difficulties from the nickel or copper surface.

Removing Chrome

In Fig. 5 will be seen two ceramic tanks each containing water and hydrochloric acid in the ratio of 1:5 of water. On a plate which has not been plated to our liking we want to remove the chrome. The plate is placed in the tank for a few minutes. During this time, the hydrochloric acid, together with the water, will remove the chrome. The plate is cleaned as soon as the chrome has disappeared. The plate then can be placed right on the hanger and plated again.

(Concluded)

BOOKS

Theory and Practice of Composition

THE United States Government Printing Office is authorized by law to conduct a training program for apprentices in the various Graphic Arts trades. As a part of its Div. of Personnel, the Office maintains an Apprentice School where a full-time staff and special lecturers provide instruction and training projects in the theory and practice of the printing art.

From this program, the GPO has assembled a composite of 40 classroom lectures on composition in the recently published book *Theory and Practice of Composition*. The 254 page publication is the second of a series of texts in the Training Series. Each chapter constitutes a lecture, a list of supplementary readings, questions for study and discussion, and a work project. There is also included a glossary of printing house terms.

In addition to a description of the many different operations of the compositor, the lectures deal with the historical background of the trade and its principal traditional contributors. Included are chapters on type faces, quads and spaces, composing room equipment, proofs, making corrections, type calculation, lockup, imposition, paper, style aids, basic layout, estimating, book work, tabular composition and typesetting methods.

Theory and Practice of Composition—Issued by John J. Deviny, Public Printer of the United States. Book consists of 254 pages; size, 6 in. by 9— in.; grey linen cover with blue stamping. May be ordered from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, $1.50 per copy.

Color Names Dictionary

Container Corporation of America has published a Descriptive Color Names Dictionary as a 64 page supplement to the company's Color Harmony Manual. The Dictionary contains 775 names so arranged that the user can work from names to colors or, conversely, from colors to names. All of the names are the kind commonly used to describe the color of merchandise sold in the mass markets. Special promotional words invented for private brand merchandising are not included. Helen D. Taylor and Lucille Knoche, colorists, collaborated with Walter C. Granville in preparing the new Dictionary. Its purpose is to enable merchandisers to describe the colors of products in terms that the general public will quickly understand. It is expected that the new Dictionary will be especially useful to newspaper and catalog advertisers who need to describe the color of merchandise pictured in black and white.

Opens Cleveland Branch

Howard Flint Ink Co. has announced the opening of a modern factory branch at 1150 West Third St., Cleveland 13. Facilities available at the new branch include color matching, modern machinery, complete stock, and trained personnel. In announcing the opening, the company issued a four page bulletin printed in four colors with Flint gloss inks.

Doubles Plant Capacity

J. M. Huber Corp. is doubling the size and capacity of the new furnace carbon black plant which it has under construction near Baytown, Tex., according to H. W. Huber, President. Originally planned last July to produce 36 million lbs. annually of HAF type carbon black, the revised construction estimates call for an annual capacity of 72 million lbs. The first unit will be ready for production on May 15, Huber said, and the second on November 1. The plant site has been named Aromex, Tex.

Technical Trends in Newspaper Production

Discussed at Great Lakes Mechanical Conference — Personnel Session informative — High Shrinkage Stereotype Mat here to stay

EXECUTIVES attending the Great Lakes Mechanical Conference in South Bend seemed to be conscious, or were already conscious, of the necessity for faster production at reduced cost, better pictorial reproduction and greater stereotype mat shrinkage employed without equivocation as a means of reducing newsprint consumption. Several movies were shown which indicate that newspaper mailrooms are rapidly becoming mechanized by installation of conveyor systems, bundle tying, wrapping and tying and stuffing machines.

The 1951 conference was held at Hotel Oliver, South Bend, Ind., on January 7, 8 and 9 inclusive. Approx. 320 executives and manufacturer and supplier representatives attended. While the 1951 conference was not the largest in point of attendance, yet the program was as informative from a technical standpoint, if not more so, than some of the previous conferences.

Non-Metropolitan Meeting

THE first meeting of the Great Lakes Newspaper Mechanical Conference was held on Sunday afternoon, January 7. Horace Parker, Mechanical Supt., Richmond (Ind.) *Palladium-Item* and H. S. McKinley, Mechanical Supt., Marion (Ind.) *Chronicle-Tribune* served as chairman. When the subject of deadlines for smaller newspapers came up for discussion, it was revealed by a number of executives that deadlines are ineffectual. One man reported: "We, too, have a deadline but it isn't worth any more than the paper upon which it is written." Another executive asserted "Advertising copy is taken on our paper as long as the copy comes in." Another executive suggested that if the manager could be pursuaded to install a minimum charge of $5 per hr. for normally marked-up ad proofs, composing room and deadline troubles would be eliminated. One executive asserted his publisher is ambitious to secure gross lineage so that he can be regarded close to the top or at the top of newspapers in his circulation classification and doesn't care about the cost of advertising composition. A number of executives however, asserted that their troubles had been eliminated after pursuading the business office to regard deadlines as a serious matter.

The question came up as to the handling of mats for flat casting between the composing room and the stereotype room. One executive stated he had introduced a Manila envelope with blanks printed on the face of the envelope containing all necessary information for both the composing room and the stereotype department. The superintendent will not accept ad copy unless all information has been properly supplied for the printed side of the envelope. For a time, he said, he had trouble getting people to put cuts and mats back into the envelope but stated that he is now getting the cooperation of both the composing room and the stereotype department so that the envelope system is successful.

The Fairchild Electronic Photoengraving Machine came up for discussion. It seemed to be unanimously agreed that there is a considerable loss in depth in stereotype molding and for that reason the most successful reproduction is obtained by printing direct from the plastic cuts "engraved" on the machine. These are fastened to the stereotype plate with two-sided Scotch tape. In one instance it was asserted that poor quality photographs with lack of contrast and definition is responsible for poor stereotype reproduction from Fairchild halftones.

Shallow Ad Mats

Some complaint was made about the poor quality drug and food advertising mats furnished to smaller newspapers. From some of the chain stores, particularly the grocery and drug advertising firms, the chief complaint seemed to be that these mats are shallow. One executive explained that he got the sixty-seventh impression from the mat molder and cured his trouble by asking for one of the first 10 mats from the firm doing the molding for the chain store. Charles Kirk, Stereotype Supt. of the Detroit *News*, explained that since some of these mats come from the larger newspapers, one can hardly blame the stereotyper on the larger paper who wants good results from the chain store advertising in his own paper; so in making duplicate mats from the original form he uses light pressure in the molding machine. It was suggested that the chain stores should secure their duplicate mats from firms especially equipped to produce this type of mat. Carl Borkhardt of Certified Dry Mat Corp., confirmed the complaint about shallow chain store advertising mats since he travels over an extensive area in the Great Lakes territory.

When the subject of flat routers came up for discussion, Mr. Borkhardt also stated some plants do not have routers in their stereotype departments while other plants do have them but don't use them in all cases because they don't have time to properly rout the flat casts. Chairman Parker praised the utility of the bandsaw for the stereotype department. W. R. Coddington, Composing Room Supt. of the Youngstown (O.) *Vindicator*, re-

PROCEDURE USED IN SELECTING FOREMEN

"In our case," related Mr. Foy, at the Personnel Session of the South Bend Great Lakes Mechanical Conference, "foremen have been selected for their basic native intelligence, their humane sentiments, for their know-how and record—specifically, understanding of their own organization, experience with contract matters and negotiations, inherent spirit of fairness and last, knowledge of their craft. In many cases the last point is given first consideration. We are of the opinion that the other attributes are worthy of first consideration because rarely does a man fulfill these requirements without being a good craftsman by nature.

"The training of foremen is on such an informal basis that it might be better defined as a development program . . . From the beginning, he is given such advice as he needs, but he must run his own department. The most difficult hurdle he meets is his first major decision. The procrastination exhibited is understandable because of the fear of error, but he is encouraged to give his own answer—right or wrong. If a mistake is made there is no recrimination but rather he is aided further.

"Maintenance of personal dignity with proper respect for his authority and responsibility are stressed and carefully guarded. It is desirable to avoid a probationary status for foremen because of the unnecessary mental hazard. If he does not make good it is an error in judgment on our part—not his.

"The foreman is given complete autonomy of operation entirely distinct from contractual agreements on hiring. He does not set policy, but in all instances is very much a part of any policy discussion and at such times there may be accord or disagreement but friction does not result from eventual decisions if facts are fully explored and reason rather than personalities is the vehicle.

"He is encouraged to try any new method or product and a sincere effort is made to afford an opportunity to keep up with developments in processing."

OFFICERS AND DIRECTORS GREAT LAKES NEWSPAPER MECHANICAL CONFERENCE

President — Joseph R. McMullen, Asst. Production Mgr., Milwaukee (Wis.) *Journal.*

First Vice Pres.—Harry Miller, Mechanical Supt., Dayton (O.) *Daily News.*

Second Vice Pres. — Otto Lepp, Mailroom Supt., Milwaukee (Wis.) *News-Sentinel.*

Third Vice Pres.—Horace Parker, Stereo-Press Supt., Richmond (Ind.) *Palladium-Item.*

Fourth Vice Pres.—Frank Dassori, Pressroom Supt., Detroit *Times.*

Secretary-Treasurer — Al P. Oberg, Flint (Mich.) *Journal.*

Immediate Past Pres.—LeRoy Coates, Pressroom Supt., Grand Rapids (Mich.) *Press.*

Director—Royal Rager, Stereotype Supt., South Bend (Ind.) *Tribune.*

Director.—E. Curtis White, Pressroom Supt., Indianapolis (Ind.) News Pub. Co.

Director—George Feldt, Mailroom Supt., Milwaukee (Wis.) *Journal.*

Director—Edward Griesmeyer, Composing Room Supt., Cincinnati (O.) *Enquirer.*

Director—Al Lamberg, Photoengraving Supt., Detroit *Times.*

1952 Conference to be held at Hotel Statler, in Detroit, January 13, 14 and 15, 1952.

marked that in some cases makers of mats for national advertising do not do a good job in routing out the pattern plate from which the mats are reproduced. The result is that the advertisement does not reproduce well in newspapers and subsequently some of the national advertising is diverted to magazines. Mr. Borkhardt remarked, "It is cheap insurance to have a router and use it on all flat casts to avoid routing tubular plates."

Curtis White, Pressroom Supt. of the Indianapolis (Ind.) *News Publishing Co.*, stated that sometime ago trouble was had with the problem of flat newsprint rolls. He asserted the trouble in not being able to avoid flat rolls is that newspaper executives don't complain to the railroads. In his case, after the matter had been taken up, the railroad people were surprised. Railroads were advised not to accept flat rolls through the cores of which a plug cannot be inserted with 1/16 in. clearance. After some discussion it was felt that any problem related to flat rolls can be corrected through the ANPA, individual newspaper representatives and railroad executives getting together.

Tubular Press Session

UPON being introduced by Program Chairman Frank Dassori, Pressroom Supt. of the Detroit *Times*, Cecil Watkins, Mechanical Supt. of the Sidney (O.) *News* and John McRae of the Bowling Green (O.) *Sentinel-Tribune*, cooperated as chairmen of the meeting.

First, Mr. McRae discussed the advantages and disadvantages in using Tubular press equipment in smaller paper plants. In many plants the pressrooms are poorly planned and equipment is placed anywhere it will fit. Ventilation usually is bad as is heat and humidity. Paper storage and handling facilities are not what they should be. In the newspaper form, Mr. McRae asserted the elements should be 0.918 in. high. In the plant of the *Sentinel-Tribune*, flat casts and page cuts are not routed. He said that where mats are to be flat casted, the cast itself should be properly backed and shaved on its base. In his plant, 0.035 in. packing is used on flat cast mats and 0.050 in. on the newspaper mats. When mats are cut from newspaper page mats, its bolsters should be supported when trimming the mat.

He remarked: "We stay close to steel for stereotype mat molding." In his plant a tubular mat 0.028 in. thick is used. The molding combination consists of an Imperial creeper 0.062 in. thick, a cork 0.090 in. thick, together with a slip sheet and board. The molding cushion is 0.152 in. thick and gives very little depth but does provide a lot of detail.

He stressed the importance of pitch line printing on the press. One should always remember that the plate and blanket cylinders must roll together just like the teeth of gears.

Mr. McRae remarked that he pencils the top and bottom of the mats before casting. The only finishing on the page plates is to pass a plane around the edges. The press inking rollers are set as lightly as possible. The *Sentinel-Tribune* press is a Goss Unitube Tension Lockup machine. The most important thing to watch is the pitch line. He asserted that he has 1/8 in. more paper going through the unit than is specified by the manufacturer. Another important item is to keep the plates down to 7/16 in. thickness.

John E. Ferrier, Mechanical Supt. of the Wabash (Ind.) *Plain Dealer*, said that the press in his plant is provided with a 36 in. blanket. The pressman wants a 35 in. blanket. Would there be trouble if the pressman was provided with the 35 in. blanket in connection with the use of a 34 in. wide web? Auburn Taylor, Pressroom Supt. of the Charleston (W.Va.) *Gazette*, stated that the top blanket could be 1 in. wider than the underpacking. The advantage in this case would be to delay oil soaking into the blanket by that much more space.

Carboloy Tipped Knives

Some discussion was had on the setting of cutter knives on the plate finishing machine. It was explained that usually two sheets of newsprint are applied back of the gauge and the knives can be pried into position with a screwdriver so that both knives are set the same. Chairman

On Opposite Page are Shown a Number of Executives Attending South Bend Great Lakes Conference

1.—Leon A. Link, Production Mgr., Cleveland *Plain Dealer*; L. M. Phares, Machinist, Champaign (Ill.) *News-Gazette*; William Easton, Chief Composing Room Machinist, Milwaukee (Wis.) *Journal.*

2.—Earle H. Runion, Runion Production Engineers; Peter de Florez, The de Florez Co.; George Bolton, Chief Composing Room Machinist, South Bend (Ind.) *Tribune.*

3.—Studiously, Phil Hammond, Intertype Field Engineer, and Rene Leach, Manager, Mergenthaler Linotype Co.'s Chicago Agency, bone up on their papers to be presented at the combined Composing Room-Machinists' Session of the Great Lakes Mechanical Conference.

4.—Walter Kneal, Photographer, Cleveland *Press*; Al Levine, Vice President, Consolidated Photo Engravers & Lithographers Equipment Co.; Kenneth Brouse, Photoengraving Supt., Kalamazoo (Mich.) *Gazette.*

5.—Howard Jampol, President, The Jampol Co.; George Feldt, Mailroom Supt., Milwaukee (Wis.) *Journal*; Otto Lepp, Mailroom Supt., Milwaukee (Wis.) *News-Sentinel*; William Zuti, Asst. Mailroom Supt., Youngstown (O.) *Vindicator*; A. H. James, Field Engineer, Cutler-Hammer, Inc.

6.—Don Clark, Asst. Secretary, Great Lakes Conference and Stereotype Supt., Flint Grand Rapids (Mich.) *Press*; Frank Dassori, Pressroom Supt., Detroit *Times*; LeRoy Coates, Immediate Past President, Great Lakes Mechanical Conference, and Pressroom Supt., Grand Rapids (Mich.) *Press*; Charles M. Kirk, Past President of Great Lakes Mechanical Conference and Stereotype Supt., Detroit *Times*; Deo A. Padgett, Past President, Great Lakes Mechanical Conference, and Composing Room Supt., Cleveland *Plain Dealer.*

7.—L. J. Griner, Production Mgr., Detroit *News*; Earl Weiskittel, Pressroom Supt., Youngstown (O.) *Vindicator.*

8.—Lee Doll, Mechanical Supt. of the Indianapolis News Pub. Co. is speaking at the Personnel Session; at right are Harry Miller, Mechanical Supt., and John A. Foy, Asst. General Mgr., both of Dayton (O.) *Daily News.*

9.—Cecil Watkins, Mechanical Supt., Sidney (O.) *Daily News*; Harry Miller, Mechanical Supt., and Edward L. Recih, Composing Room Supt., Dayton (O.) *Daily News.*

10.—Robert W. Buckley, Ludlow Typograph Co.; W. R. Coddington, Composing Room Supt., Youngstown (O.) *Vindicator*; Dr. R. Hunter Middleton, Director of Typography, Ludlow Typograph Co.; Clarence W. Harding, Public Relations Director, South Bend (Ind.) *Tribune.*

11.—Joseph Dorr, Capital Tool & Mfg. Co.; Everett Hall, Pressroom Supt., Dayton (O.) *News*; J. H. Clancy, Representative, Niles & Nelson, Inc.

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PROTEST AGAINST TRADITION

W. R. CODDINGTON, Composing Room Supt., with the connivance of Howard Measmer, Stereotype Supt., both of the Youngstown (O.) Vindicator, exhibited a newspaper page entirely made up of slugs, rules, cuts and the like which were 0.620 in. high instead of the standard 0.918 in. at the South Bend Great Lakes Mechanical Conference. In talking before the Composing Room meeting, Mr. Coddington stated that 0.918 in. was adopted as standard for type high in the days when compositors picked up all type by hand—in other words, they were provided with pieces of metal which could be grasped easily with the thumb and finger for rapid hand composition.

He also gave reasons for reducing the height of type to 0.620 in. as follows: (1) To secure more solid slugs from line-composing machines so the slugs will withstand the severe molding pressure to which they are subjected in the stereotype department. (2) Less air will have to be displaced from the mold cells when the slug is cast. (3) In certain instances, production will be increased (for instance, when casting display slugs). (4) Weight of type on galleys will be reduced. Advertisements which are handled separately in galleys will be reduced in weight, and finally the weight of the form itself will be greatly reduced to facilitate manual handling in the composing room and the stereotype department. (5) Volume of metal supply will be reduced by one third. (6) Volume of metal to be remelted into pigs would be reduced correspondingly.

It has been noted by ***Printing Equipment Engineer*** that the height of 0.620 in. still is a bastard measurement just as is 0.918 in. is a bastard measurement of 1 in. Someone suggested that since ⅝ in. equals 0.625 in., perhaps this would have been a better decimal division of the inch than the measure which was adopted by Messrs. Coddington and Measmer.

Mr. Coddington, in his discussion about the new type high measurement, said that line-composing machine, Monotype, and Ludlow molds would have to be changed which would naturally call for some modification in the accompanying casting and adjusting devices and also in the mat molding machines in the stereotype room as well as proof presses, page form chases and the like. He made no attempt to delve into the extensibility of these changes nor did he speculate as to whether or not it might be possible to pursuade the magazine and commercial sections of the industry to adopt a lower type high standard.

His concluding remark was; "There it is fellows—it's worth thinking about. We expect to continue our experiments."

McRae asserted that the machine knives are intended to take a light and finishing cut. Since there is no gauge, however, the screws must be set by trial and error method. Mr. Ferrier stated that a machinist in his town talked him into applying Carboloy tipped knives in his plate finishing machine. The knives have been in use without any adjustment since 1949. Any large machine shop can furnish these knives. Mr. Ferrier warned, however, that if the cutting knife is ever broken, the broken-off piece should not be permitted to get into the metal pot because Carboloy is heavier than lead and would cause a lot of trouble.

Newsprint Records

Chairman Watkins recommended that all newspaper executives keep records of newsprint consumption by furnishing the business office with a daily press report including a waste record so that in the event of newsprint rationing, newspapers can obtain their quota of newsprint without difficulty. In other words, over a period of time the records will show the average amount of newsprint consumption. These records will be of immense value to the newspaper wishing to retain its average quota. Such records should include spoilage, number of copies wanted each day, papers delivered including waste records. The records can be kept daily and turned into the office at weekly intervals.

Visit Fine Plant

After adjournment of the Sunday afternoon session, all those in attendance at the Great Lakes Conference were invited to the recently modernized plant of the South Bend *Tribune*. After the visitation period, lunch was served by the *Tribune* staff. Everyone visiting the *Tribune* plant was highly impressed with the modern facilities available. Work simplification and conveyor systems were installed wherever possible. The plant is beautifully lighted, the floors are modern, and every facility for speeding newspaper production has been adopted.

Opening Session

THE Opening Session of the Great Lakes Conference occurred on Monday morning, January 8, with President LeRoy Coates, Pressroom Supt., Grand Rapids (Mich.) *Press*, presiding. F. A. Miller, President and Editor of the South Bend (Ind.) *Tribune*, welcomed the delegates to South Bend and presented a cordial invitation to the executives to make themselves at ease while in South Bend.

Engraving Room Session

AFTER adjournment of the Opening Session, Kenneth Brouse, Engraving Supt. of the Kalamazoo (Mich.) *Gazette*, served as chairman of the Engraving Room Session.

The first speaker to be called upon was Kenneth Solt, Art Editor of the Cleveland *Press*, who discussed *An Art Editor's Viewpoint*. Among other subjects related to illustrative art in newspapers, he said that holiday editions in particular should contain as many pictures and color as possible. People, as a rule, don't have time and don't want to read heavy news items particularly with respect to Congress, etc., which news should be briefed as much as possible. He said that on a recent holiday paper, 29% of 127 columns in the Cleveland *Press* were devoted to illustrations.

He said television has speeded the process to bring news pictures faster to newspapers from a competitive viewpoint. He asserted that newspaper mechanical department executives are going to have to develop speedier methods in order to get the latest possible pictures in the latest edition as soon after events happen as possible.

Walter Kneal, Chief Photographer of the Cleveland *Press*, wondered why provision has not been made at mechanical conferences for a photographic staffs of newspapers. He felt it would be extremely advantageous for the photographer, art editor and the mechanical department heads to work more closely together and to have a place on mechanical conferences' programs for the discussion of photography.

Koloroid Process

Al Levine, Vice President, Consolidated Photoengravers and Lithographers Equipment Co., discussed the *Koloroid Color Proofing Process*. Mr. Levine stated: "The Koloroid Color Proofing Process is a simplified method of making full color ink pigment proofs from separation negatives. Koloroid pigment paper has photographic qualities and in the Koloroid Process we have made printing inks a photographic media for the first time . . . Through a photographic transfer method, your cameramen can, by using a contact printer and arc lamp and with his color separation negatives, produce an image which is transferred to a Koloroid treated base paper. A full color proof can be produced within an hour after separation negatives are completed." He also explained that the Koloroid Process will give an ink proof right from the negative to satisfy an impatient customer who cannot wait for the finished plate to be completed. (See November 1950 issue of *Printing Equipment Engineer*, article entitled *Koloroid Color Proofing Process* by

Joseph E. Johnston, primary developer of the process).

Mr. Levine stated that the Koloroid reproduction was within 95% of the original copy. He claims exact register in the color negatives through a strip and pin device plus a die which is used to punch holes in the film.

Passing Facts Instead of Buck

Immediately following the address of Mr. Levine, Leon A. Link, Production Mgr. of the Cleveland *Plain Dealer*, got together on the platform several mechanical executives. Acting as moderator during the session, Link invited Harry Miller, Mechanical Supt., and Carl Riedmiller, Photoengraving Supt. of the Dayton (O.) *News*; Earl Weiskittel, Pressroom Supt., Youngstown (O.) *Vindicator*; L. J. Griner, Production Mgr., Detroit *News*, and Walter Kneal, Photographer, Cleveland *Press*, to act as a panel during the Passing the Facts section of the Photoengraving Session.

Newsprint and Greater Shrinkage

Mr. Griner asserted newsprint is not going to get any more plentiful in the immediate future and so far as he could see, in the distant future. The only solution so far as reduction of materials and production costs are concerned is through the use of increased dry mat shrinkage.

Answering a question from the floor, Mr. Griner stated that high shrinkage is used on the Detroit *News* and that a 65-line halftone screen is employed for photoengraving, but when the plates are printed in the paper the halftone screens measure 71 or 72 lines per in. He stated that Ernest Scherer, *News* Photoengraving Supt. attempts at all times to accentuate the tone value of pictures in the halftone plate. In other words, he tries to make cuts suitable for high shrinkage mats. Charles Kirk, Stereotype Supt. of the *News*, stated he can now go to Scherer and ask him to make a cut from which the stereotyper can get a good reproduction in a high shrinkage mat. Moderator Link remarked that Mr. Scherer and the art director of the Detroit *News* work so close together that "one would think they were going together."

Zinc Order M-15

At this juncture Moderator Link brought up for discussion the subject of photoengraving zinc plate stock. He explained that all newspaper mechanical and production executives were interested in the prospects for the quantities of zinc which would be permitted under our garrison economy. So far, apparently, the only restriction placed upon the use of zinc is that contained in Zinc Order No. M-15 issued by National Production Authority recently. (See Page 37, January 1951 issue of *Printing Equipment Engineer* for news item about the Order).

Clarence Seaman, Vice President of Imperial Type Metal Co. was called upon by Mr. Link to discuss the Order as also was Jack Kearns of Atlantic Zinc Works. During the general discussion which followed it became apparent that newspaper executives feel the terms of Zinc Order M-15 should be liberalized (but so far no relief has been obtained from NPA) inasmuch as 90% of zinc used in photoengraving is reclaimable and a very small part of the zinc washes down the drain during the etching operation. No one seemed to know whether or not the ANPA or various newspaper publishers had succeeded in liberalizing the provisions of the order.

In response to an inquiry from the floor, it seems that no one had developed a satisfactory backing for thin gauge zinc to bring the combination up to 16 ga. or 0.065 in. thickness.

Carl Riedmiller, Photoengraving Supt., Dayton (O.) *News*, reported that during World War II it was customary at the Dayton *News* to use 0.032 in. zinc for editorial purposes and to secure old 21 ga. cuts from the morgue. By doubling up the two thicknesses of 21 ga. and mounting them upon the standard base used for 0.065 in. cuts, the cutting of bastard height base was avoided.

Charles Kirk, Stereotype Supt. of the Detroit *News*, mentioned that during the last war the *News* used two different thicknesses of zinc stock for photoengraving (16 ga. and 18 ga.) and that the metal base for each thickness was distinguished by painting the top of the base with a blue or a red solution for easy identification in the composing room.

Henry Arbogast, Photoengraving Supt. of the Milwaukee *Journal*, reported that the use of 0.049 in. zinc stock is not too much of a problem with respect to register in color work provided there is not too much open work in the plate. He said that even on 0.065 in. (16 ga.) zinc the photoengraver has to watch the register carefully.

Mr. Arbogast also reported, in response to an inquiry, upon the use of an incandescent 3500 deg. K. lamp which he has been using experimentally for color work. Inasmuch as the experimental work had been limited he was not ready to report upon the results.

A question came up for discussion at this time which was related to a means or method for reducing a number of odd shots in newspaper photoengraving departments. This seemed to be a problem in all plants. Kenneth Solt, Art Editor of the Cleveland *Press*, says that a partial answer to the problem is teamwork between the editor, the photographer and the photoengraving department.

(*Continued on Page 52*)

Color for Smaller Daily Newspapers

CECIL Watkins, Mechanical Supt., Sidney (O.) *Daily News*, (circ. approx. 11 thousand daily), explained at the South Bend Great Lakes Conference that no color equipment is available in the plant other than possession of two Capco Portable Color Ink Fountains. He stated in case an advertiser wants to run an advertisement with a woman's dress in color, but no color plate or mat is available, the *News* furnishes the plate for the color spot.

He remarked that while the *News* press is of the Tubular type, this method of registering in plates and marking them for color separation for the router can be employed on any press irrespective of the arrangement of the press units and can also be done without altering the press set-up for the color run.

The color plate is provided as follows: A screened, benday pattern photoengraved zinc plate or plain tint block is molded into a page mat; the area of this plate is considerably larger than the color spot to be printed in the advertisement and is located in approx. position in the form before molding the mat.

The black plate for the advertisement is finished ready for the press in the usual way. The plate bearing the screened or benday color spot also is finished ready for the press with the exception of determination of the exact shape and size of the benday color spot.

The diagram, Fig. 1, illustrates proofing arrangement of two units of Tubular Press in plant of Sidney (O.) *Daily News*. To obtain exact size of a color spot in an advertisement where no mat or color plate is available, a regular black plate is cast and placed on the second impression plate cylinder of the upper couple on Unit No. 1.

It will be noted that the units are arranged vertically for the purpose of this explanation. Ordinarily, the black and color plates for the regular press run would be reversed in position (as shown in Fig. 2). In the proofing operation, Fig. 1, however, the black plate is mounted as shown in this diagram. At this time, the pressman has cleaned up the inking rollers but may or may not have applied the portable color fountain.

After the plates have been mounted on the cylinders, the two plates are put into register by means of compensators with the press in slow motion (that is, the plates are registered so that the oversize benday area on the color plate (mounted on upper couple of Unit No. 2) fully covers and its edges extend beyond the woman's dress in the black plate (mounted on upper couple of Unit No. 1).

The inking rollers on upper couple of Unit No. 2 are now raised and the ink on the benday plate is wiped off. The ink on upper couple of Unit No. 1 is adjusted to print heavily on the web.

As the press is revolved the heavy application of ink on the paper web from the plate (on upper couple of Unit No. 1) will be offsetted on the color plate on the upper couple of Unit No. 2. The result is a definite outline on the color plate. The plate is removed from the press. The offsetted application of ink on the plate is used as a guide for the router operator to follow in routing the color plate.

After the benday color plate has been

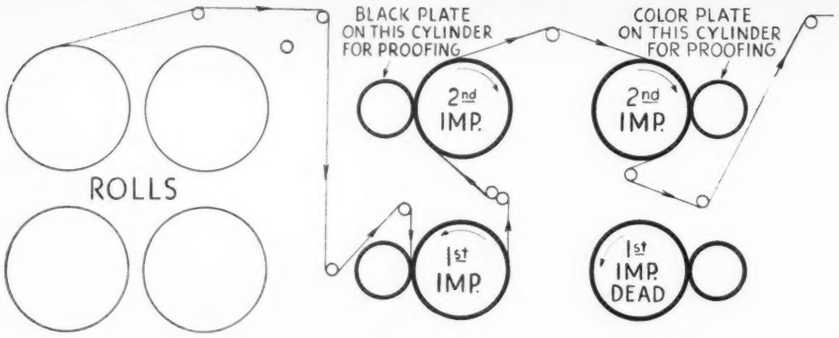


Fig. 1.—Diagrammatic representation of four of the eight Tubular Press Units in plant of the Sidney (O.) *Daily News*, showing positions of stereotype black and color plates for proofing to secure register on the color plate made in the plant.

routed, the positions of the black and color plates are reversed from the positions shown in Fig. 1 to the positions shown in Fig. 2.

Mr. Watkins stated this color method has been employed in the *News* plant for several years. Following his remarks, another mechanical executive stated he had adopted and is using the *News* color method.

This same method is useful also when making separation from a single mat. First, the black plate is routed with the color separation being made and then the routed image is offset on the color plate for the router operator to use as a guide. Also in routing color plates for jobs that have a lot of color headings it is possible to reverse the procedure. Rout the color plate first and offset it on the black plate and it will show exactly which headings are to be routed out of the black plate. This saves a lot of time for the router.

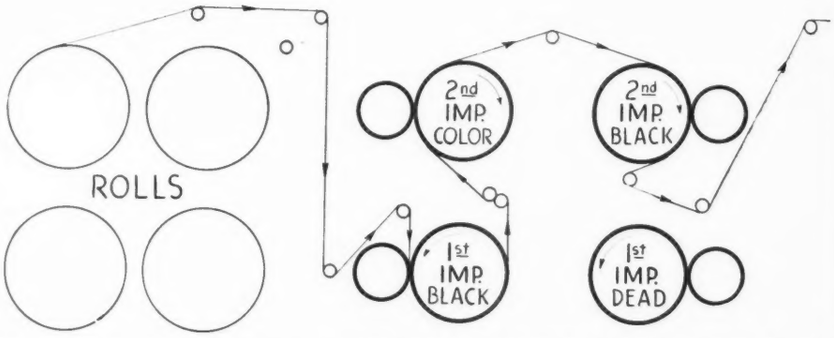


Fig. 2.—Diagrammatic representation of four of the eight Tubular Press Units in plant of the Sidney (O.) *Daily News*, showing positions of stereotype black and color plates ready for regular daily press run.

Stereotype Session

(*Continued from Page 51*)

THE closing session of the stereotype section of the program on Tuesday afternoon was devoted to an informal discussion of stereotyping problems. Charles Kirk, Stereotype Supt. of the Detroit *News*, and Lloyd Wright, Stereotype Supt., Fort Wayne Newspapers, Inc., Fort Wayne, Ind., functioned as chairman.

In his opening remarks Chairman Kirk stated that nothing can prevent improvement of the stereotyping process. He asserted: "Until we can develop a process that will turn out a plate every 15 sec., there isn't much to worry about." Stereotypers, however, realize the need for improvement in the process. The present challenge to all stereotypers is to turn out plates faster than ever before, of better quality with high shrinkage mats. Publishers continue to demand the cutting down of roll width; consequently, we can expect as a permanent thing, high shrinkage in the stereotype process and stereotypers will find it necessary to work from that standpoint while continuing to try to improve stereotype plate reproduction.

Plastic Blanket

A lively discussion concerning the new plastic molding blanket developed by ANPA Research Department occurred. During the discussion it was evident that all stereotypers are fascinated with the utilities of the new molding medium which is currently being introduced to the trade. As the discussion progressed, it was evident that, as in the past, stereotype equipment in different plants has varying and peculiar characteristics. Considering that the properties of the new molding blanket are different than the materials used previously, and that the properties of the new blanket have entirely different characteristics, it appeared that the stereotype executives were somewhat frustrated with the results secured from initial use of the blanket. In any event, however, threaded throughout the discussions it was evident that all of the speakers want to adapt themselves to the use of the blanket 100%.

One stereotype executive stated that when molding from a form containing Ludlow Gothic, he could not get depth in the bowls of the letters. Another stereotype executive stated that with a certain make of roller, he can't get shrinkage, but somewhere along the line in the molding process where he apparently had the shrinkage, he lost it by the time the plate was ready for the press. Another stereotype executive stated he could not get penetration or depth in the open areas.

One speaker asserted the blanket was developed to provide uniform penetration into the mat. There is greater tuck-in in the width without loss of length in the page. The blanket can be made to give a parallel condition over the entire area. He explained that the plastic molding medium is not compressible—it is different from steel, in that plastic flows.

It seemed to be agreed unanimously that the chief utility of the plastic molding medium is that more shrinkage can be obtained with it. Also, better type reproduction can be secured with the plastic blanket. It was also agreed that on halftone reproduction further experimentation will have to be conducted on halftone areas.

Another speaker stated, contrary to the assertions of a number of the executives participating in the discussion, that greater molding depth with less molding pressure is being obtained in a number of newspaper plants.

Moving on to the next discussion topic, one stereotype executive related he had been using a direct pressure molding press for about one year but found it expedient to resume roller molding operations. He asserted he had to have 1 in. shrinkage. With the direct pressure press he had to have at least 2% more moisture to get the same 1 in. shrinkage on the direct pressure press as he secures on the roller. One of his difficulties was that the halftone areas lost depth when drying and forming the mat. He stated that at the present time the pressroom in the plant in which he is employed is securing upwards of 100 thousand impressions per plate. Another mechanical executive stated that some years ago in his plant, a 50 thousand run was considered good from each plate. However, more recently, runs as high as 135 thousand are obtained from each plate. He stated that more trouble is experienced from cracking of plates than from wear of the plate.

Chairman Kirk then asked L. J. Griner, Prod. Mgr. of the Detroit *News*, to discuss the Alico Evenray Stereotype Mat Drier. The drier really is a mat pre-shrinker which eliminates certain moisture from the mat and pre-shrinks it before being put into the Sta-Hi mat forming machine. Mr. Griner reported that ⅜ in. mat shrinkage can be obtained in 45 sec. from the Alico Infrared Drier. (See illustrated article on Page 128, December 1950 issue of *Printing Equipment Engineer*.)

Bi-Metal Photoengraving Plates

A RATHER interesting development was discussed by W. Alexander, Photoengraving Supt. of the Cleveland *Press*, at the South Bend Great Lakes Conference. Alexander stated he had had secured a quantity of 0.063 in. gauge magnesium plate stock coated with 0.002 in. zinc. The total thickness of the plate is 0.065 in. or regular 16 ga. photoengraving plate stock. The idea behind the use of the bi-metal plate is to permit the photoengraver to secure zinc engraving results while utilizing the magnesium below the zinc surface to permit 25% faster etching time in the photoengraving department. The same etching routine is used in a bi-metal plate as for zinc. On line work, Mr. Alexander stated he had secured depths of 0.025 in. to 0.030 in. on one plate measuring 18 in. by 24 in. which consisted of a combination flat. He cut down the production time by 50% because he was enabled to eliminate routing time. He also asserted that the high cost of the plate is offset by the lower production cost in the engraving department. In response to a question from the floor he stated there was no undercutting of the interstices between the dots or around lines because of the affinity of the dusting powder for magnesium. In response to another question, he said there was no pulling away of the zinc caps in the halftone dots.

Personnel Session

THE Personnel Session on Tuesday morning, January 9, was an important and valuable source of information with respect to linking the mechanical executive with both management and the rank and file employees in the plant.

Lee Doll, Mechanical Supt. of the Indianapolis (Ind.) *Star-News* and Harry Miller, Mechanical Supt. of the Dayton (O.) *News*, served as chairmen of the meeting.

E. G. Plum, Vice President, Indiana Bell Telephone Co., discussed *Personnel Administration* from the standpoint of management already recognizing the importance of personnel work, its organization and administration. His address was full of valuable advice which could be applied by management executives in the daily newspaper field.

"Machines and equipment," said Mr. Plum, "do not function without people to operate them and keep them in repair. The efficient operation of a plant is not solely a technical problem requiring only the skill of an engineer. Good management has always meant getting the cooperation of other human beings. Reduced to its escense, good management means getting effective results *with* people."

Mr. Plum stated that personnel administration is an essential tool in the operation of any business and the principal question is "How can it best be used?" The first job to be done is to set an objective or policy. After consideration, management would come up with four broad objectives. (1) To have employees honestly and sincerely feel that the company is a good one to work for; (2) To have employees accept the service objectives of the company as their objectives; (3) For employees to have faith and confidence in the company's integrity, and (4) for employees to have a sympathetic interest in all company problems.

After having determined upon the four broad objectives, it will then be necessary to adopt some policies for the guidance of supervisors (foremen) so that conditions within the organization can be created which will make these objectives realistic.

Mr. Plum outlined eleven policy items which could be adopted by management as a basis for personnel relationship in the plant.

He warned, however, that "Management has to perform according to the policy in its day to day operation. Failure to observe the policies may tear down an employee's favorable attitude which has taken years to build up. He emphasized it is essential that these policies be understood and used from the top of the organization down through all levels of management, otherwise the policies cannot be made effective."

Mr. Plum spoke of the department head who takes an enthusiastic approach

(*Continued on Page 76*)

IPI California Changes

IPI operations in California, known as The International Printing Ink Corp., Ltd., recently transferred its business and assets to Interchemical Corporation and will become a part of the IPI Division.

Paul N. Baxter, appointed Divisional Vice President of IPI and Manager of the Pacific District.

Interchemical will continue the business as the Pacific District of IPI under the name International Printing Ink Div. of Interchemical Corporation.

Paul N. Baxter has been appointed Divisional Vice President of IPI and Manager of the Pacific District. He will be located in San Francisco. Pacific branch managers are: Ernest A. Green, Los Angeles; A. Reese, Portland; Gordon L. Smith, Seattle. Luke F. McGuff, formerly with the Chicago factory, becomes Factory Manager at the Oakland,

L. F. McGuff, appointed Manager of the IPI Oakland, Calif., factory.

Calif., plant. McGuff has been in the ink business for 45 years. R. E. Carlson continues as manager of the Los Angeles factory.

Zimmer Expansion

Zimmer Printers Supply Co., Inc., has purchased two buildings adjacent to the firm's present location at 72 Beekman St., New York. The newly acquired properties are located at 74 and 76 Beekman St. Approx. 40 thousand sq. ft. of floor space will be added by this purchase to Zimmer's present area available for manufacturing, offices and service facilities. In addition to the purchase of the buildings, the Zimmer organization recently bought the entire steel cutting, creasing and perforating rule manufacturing department of E. C. Atkins & Co., Indianapolis. Operations of this department will be carried on in New York. The Atkins company will continue to manufacture its regular line of Graphic Arts machinery and equipment.

ATF Appoints Heinsohn

A. E. Heinsohn has been appointed by American Type Founders as distributor of its products in a Canada-to-Mexico territorial strip of the United States embracing all or part of 13 states in the Rocky Mountain area. Under the new arrangement, Heinsohn plans to establish regional branches throughout the territory.

New Ideal Plant

The completion of Ideal Roller & Mfg. Co.'s plant at Huntington Park, Calif., is announced in a four page, two color bulletin issued by Ideal. The roller manufacturing plant, located at 6069-6073 Maywood Ave., will serve the California, Washington and Oregon territory. A list of rollers and services offered by the new plant are included in the bulletin.

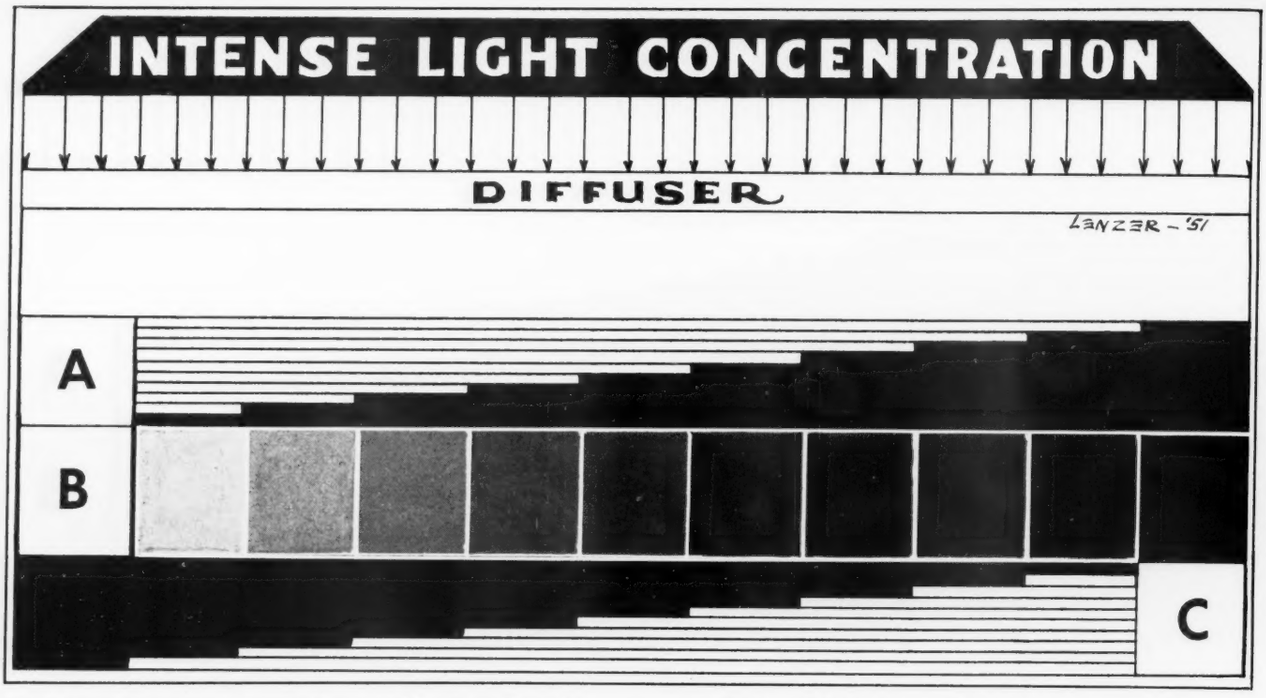


Fig. 23.—A represents a cross-section of a Negative. The rulings represent density divisions in tenths. Areas in solid black represent the percentage of exposed and developed silver halide in the recorded image.

B—The Grey Scale is representative of the amount of light either transmitted or withheld by the silver image in the negative.

C indicates the cross-section of a Positive. The rulings represent density divisions in tenths. Black areas are representative of the developable image after exposure to the light transmitted through the negative.

The ABC of OFFSET

For Letterpress Printers

By George Jos. Lenzer

XII
PHOTOGRAPHIC FILMS AND PLATES

IN preceding chapters the primary tools of photo-mechanics have been discussed in line of their importance and utility. The next link of importance is the cameraman with his training, experience, and know-how. It is he who makes possible the duplication of prepared copy, by manipulation of the tools at hand, and by converting light-sensitive materials into permanent images of the original.

What are light-sensitive materials?

"Oh yes, they are the films that are used to take a picture. Why, I can buy them at the corner drug store. All I do is put a roll of the stuff in my camera, aim it at my wife, press a button, and *poof!* a picture. Photography? Nothing to it. I do it all the time. Simple isn't it?"

If photography was so simple, there would be no need to carry on this discussion, but, since there is more to it than merely pushing a button, let us give this subject a little study and consideration.

Supports

Because a photographic image in a light sensitive material must be capable of withholding certain portions of light while at the same time transmitting others, it is evident that the support for the material known as emulsion, must be transparent and must embody qualities not possessed by the emulsion (Fig. 23). Most common supports for emulsions are glass and plastics, embracing these qualities: (1) Photographically insert; (2) Unaffected by chemical solutions used in processing; (3) Thickness; (4) Flexibility; (5) Durability; (6) Dimensional Stability; (7) Permanence; (8) Non-combustibility.

Glass Supports

Glass (Fig 24a and Fig. 24b) is one of the oldest transparent bases for photographic emulsions extant, dating from the first days of the wet plate process. Photographic emulsions having supports of glass are generally called dry plates.

Largely superseded by plastic film supports, glass is still preferred where rigidity, dimensional stability, and freedom from warp, shrink and swell are important. Glass is highly transparent, and is practically photographically inert.

Despite its good qualities, glass is discredited because of its weight, bulk, fragility and non-flexibility.

Plastic Supports

Plastics most commonly used as supports for photographic emulsions (Fig. 24c and Fig. 24d) are generally composed of cellulose acetate, or Vinyl composition.

Factors favoring plastic films are: Strength, transparency, flexibility, low inflammability and light weight. Thicknesses of plastic bases vary according to the type of film and the prescribed use.

Cut and roll films have varying thicknesses, with corresponding variations in flexibility. Being flexible, their lack of rigidity results in handling difficulties during processing operations, especially when the films are large. Excepting certain plastic films, warp, shrink and stretch of the materials make them undesirable for color work where accurate register is required.

Plastic film is flexible but not elastic and does not possess the ability to spring back to its original shape when accidentally kinked or creased. Accidental

kinks and creases in the film cause defects and distortions of the image, and can cause defects in printing plate images which are difficult to correct.

Vinylite Film Base

The nearest thing to glass in supports for photographic emulsion is Vinylite (Fig. 24c). Vinylite has virtually no water absorption, has little or no tendency to warp or shrink at normal temperatures, and is odorless, tasteless, resistant to acids and alkalies, does not stain or soften under grease or oil, and is unaffected by alcohol in any concentration. Alipathic hydrocarbons do not affect it. It is soluble in ketones and esters, and swells in aromatic hydrocarbons.

As a support for photographic emulsions, its transparency closely approaches that of glass, and for all practical purposes can be said to be equal.

The Emulsion

The light sensitive coating or emulsion (Figs. 24b, 24c and d) is the image retaining substance with which the photographic film or plate is coated. Throughout the layer of gelatin emulsion, innumerable crystals of silver halides are evenly dispersed and held in suspension. Silver halide crystals, found in all photographic emulsions are compounds of silver with bromine, chlorine, or iodine. Least susceptible to the action of light is silver iodide, while silver bromide is most susceptible. When silver iodide and silver bromide are combined, the emulsion formed is much faster than when silver bromide is used alone.

Emulsions are frequently referred to according to the silver compound content, such as chloride, bromide, chloro-bromide, or bromo-chloride. The latter two names are synonymous.

Emulsion Characteristics

Photographic emulsions of many kinds are available. They differ from each other in one or more physical or photographic characteristics. Knowledge of these characteristics is important so that accurate selection of suitable material for specific needs can be assured. Some of the characteristics are: (1) Color Sensitivity, (2) Contrast, (3) Latitude, (4) Grain Size, (5) Resolving Power, and (6) Overcoating.

Physical Properties of Emulsions

In general the physical properties of emulsion are thickness, melting point, processing effects and irradiation.

Thickness—Negative emulsions, usually are comparatively thick for the purposes of obtaining satisfactory latitude in exposure.

Positive emulsions, generally are thinner than those used for negatives. Reasons for this are to insure the production of complete brilliant pictures and assured highlight exposure throughout the emulsion.

Reversal emulsions, are much thinner than those for positives.

Paper and strip-film emulsions are extremely thin, affording rapid processing by which clearly defined images by reflected or transmitted light, are provided.

Melting Point—Gelatin, the purest obtainable and used in photographic emulsions has an average melting point of about 150 deg. to 110 deg. F., with some having slightly higher melting points. The melting points are generally predetermined to meet natural conditions existing in tropical, arctic and temperate regions of the world.

The highest safe processing temperature for an emulsion is ordinarily about 20 deg. F. below its actual melting point. Observance of this safe temperature during all processing will assure freedom from accidents due to swelling and softening. Although the emulsion can be hardened during processing, too much hardening will decrease the swelling action of the coating, and consequently reduce the penetration rate of the various solutions. Obviously, in torrid climates it is necessary to have a higher degree of hardening than normally required.

Processing Effects—Gelatin, obtained principally from hides, bones and hoofs of animals is a peculiar substance. It dissolves freely in warm and hot water but refuses to dissolve in cold water, in which it forms a jellylike mass. If the jellylike mass is heated it will liquify; and when cooled it will set again. This reaction can be repeated often, although continued repetition will cause the gelatin to lose some of its setting qualities.

The gelatin in different emulsions varies in hardness due to the fact that some gelatins are naturally harder than others. Hardness of some gelatins can be increased by adding chrome alum.

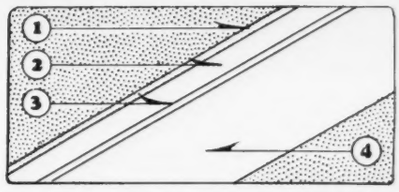


Fig. 24a—Wet Plate—(1) Silver Solution Sensitizer; (liquid); (2) Iodized Collodion Coating; (3) Albumen Sub-stratum; (4) Glass Plate.

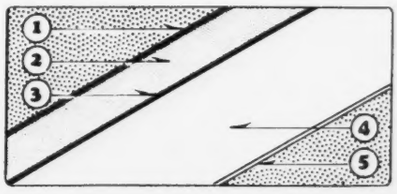


Fig. 24b—Dry Plate—(1) Color Selective Overcoating; (2) Silver Sensitized Emulsion; (3) Substratum, Anti-halation Dye included; (4) Glass Plate; (5) Alternative Anti-halation Coating.

Fig. 24c—Plastic Films—(1) Color Selective Overcoating; (2) Silver Sensitized Emulsion; (3) Anti-halation Sub-stratum, Dye included; (4) Cellulose or Vinyl Plastic Support; (5) Anti-curl Gelatine Backing. Anti-halation Dye frequently included. (Cellulose films are smooth surfaced and are transparent; Vinylite films are both smooth surfaced and rough and may be either transparent or translucent.)

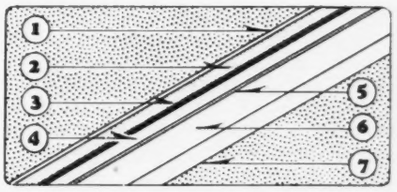


Fig. 24d—Strip Film—(1) Overcoating, optional; (2) Silver Sensitized Emulsion; (3) Anti-halation Sub-stratum, Dye included; (4) Plastic Film Support; (5) Adhesive; (6) Plastic Film Base; (7) Anti-curl Gelatine Coating.

Fig. 24.

SUPPORT CHARACTERISTICS

Material	Processing Shrinkage[1]		Differential	Humidity Amplitude[2]		Differential	Temperature Coefficient[4]
	with grain[3]	across grain[3]		with grain[3]	across grain[3]		
Glass	.00	.00	.00	.00	.00	.00	.00000495
Vinylite	.00	.00	.00	.006	.007	.001	.000039
Cellulose acetate (regular Film)	.13	.01	.12	.226	.275	.049	.000083

[1] Processing shrinkage is the change in size resulting from development, fixing, washing and drying at 70 deg. F.

[2] Humidity amplitude is the percentage of dimensional change resulting from a 10 percent relative humidity change.

[3] With and across grain refers to the grain of the material. The differential shrinkage or stretch between these two is important because it influences the scale of the job in two directions; length and width.

[4] Temperature coefficient is dimensional change resulting from a rise of 1 deg. F.

During processing, the gelatin of an emulsion swells to different extents, but upon drying, shrinks and returns to very nearly its original size. Normal and constant temperatures of processing solutions will hold this effect to a relative constancy.

Physical Properties of Emulsions—Irradiation—Before development, a photographic emulsion is considerably turbid. There is a considerable amount of internal reflection or scattering of light within the emulsion, when light is incident upon it. The internal reflections and scattering of light causes a spreading of the image thereby lowering its definition. Irradiation, is the name for this effect.

The image spread for a particular emulsion is proportional to the exposure but it is negligible when exposure is exceedingly great.

Emulsion Characteristics Defined

The emulsions with which we are now concerned are black and white or monochrome coatings on photographic films and plates which can be classified as follows: *Orthonon*, *Orthochromatic*, *Panchromatic*, and *Infrared*. These four are general classifications as to color sensitivity, as follows:

(a) *Orthonon*, a color-blind emulsion is one which is not specifically sensitized to any color, but having inherent sensitivity to blue, violet and ultraviolet light rays. They are obtainable in speed ratings from ultra-fast to extremely slow, but are usually of relatively slow speed and high contrast.

(b) *Orthochromatic* is an emulsion especially sensitive to ultraviolet and all visible light radiations except red.

(c) *Panchromatic* emulsions are additionally sensitized to red light rays, and are subdivided into three main classes of color sensitivity: (1) Sensitive primarily to blue but slightly less to green and red, (2) Balanced sensitivity to all visible colored light, (orthopanchromatic) and (3) Highly sensitive to red, equally sensitive to blue and green, (hyperpanchromatic).

(d) *Infrared* coatings are not sensitive to either green, yellow or orange, but are particularly sensitive to the infrared rays. These emulsions are used primarily for the making of photographs with the aid of infrared radiations. In character, they are similar to color-blind emulsions except for their sensitivity to infrared light rays. Infrared plates are used in the "Fluorescent" process of reproduction for specific color separations.

Choice of Emulsions

The purpose for which it is used governs the choice of a photographic emulsion, with Color Sensitivity the first, and Speed the second primary factor determining the selection.

Speed is an indication of the amount of light required to produce a satisfactory image with a particular emulsion. Slow emulsions require a great deal of light while very little light is necessary for Fast coatings when making an exposure.

Speed is also a measure of the rate at which silver halide is reduced to a subhalide. Factors influencing the Speed of an emulsion are Color-sensitivity, Spectral distribution of light sources, Developers and the degree of development.

Summary:

From the foregoing it is evident that a different kind of emulsion is required for each different class of reproduction, *i.e.*, Line, Black and White, Color Separation, Continuous Tone, Halftone, Fluorescent and others.

Selection of the correct emulsion should be delegated to the cameraman who by his skill, experience, training and judgment is best qualified to decide. By his highly developed imagination, the cameraman can visualize the final photographic reproduction before the job is begun, a quality which will reduce to a minimum the needless waste of films and plates, because of retakes.

Specialization an Advantage

Specialization can be an advantage to the printer-lithographer in that he can limit to a few, the varieties of light-sensitive materials to be carried in stock. Especially is this true if the work done is Line or Black and White reproduction only. Unless a shop is highly specialized and dedicated to a standard form of offset reproduction, a fairly large stock of different kinds of films and plates must be maintained.

Where, in a Black and White shop, there is a desire to take a fling at color work, it is advisable to enlist the services of a commercial litho-plate maker, rather than to gamble and experiment.

It should be remembered that with the adoption of each new method or process of photomechanical reproduction, the facilities and plant procedures must be correspondingly expanded, in order to efficiently handle altered production schedules resulting from the expansion.

(To Be Continued)

Light

(Continued from Page 33)

employee morale. Bright colors will be used generally in the machinery of the future.

Supplementing Illumination

In many plants, a well designed lighting system is robbed of its efficiency by dingy interior surfaces, as was shown in scientific findings conducted jointly by du Pont Company color technicians and Philadelphia Electric Co. illuminating engineers. In these tests various sections of a work room were repainted in high light-reflective colors in order to increase the illumination.

The coefficient of light utilization in this room was no more than 27 per cent. The ceiling was refinished with light cream paint; by this simple procedure alone the coefficient of light utilization was raised to 35 per cent. In successive steps the side walls were refinished with a neutral green, dark tables and chairs were replaced with blonde furniture, and the dark maroon floor was recoated with white floor paint stippled with spruce brown.

By this planned use of all reflecting surfaces, the coefficient of light utilization was brought up to 55 per cent, an improvement of more than 100 per cent over the original arrangement. And this was achieved without installing any additional lighting equipment.

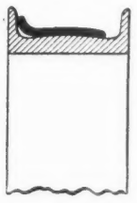
Eastern Div. Meeting

The 1951 SNPA Mechanical Conference, (Eastern Div.) will be held in Atlanta, Ga., August 27 and 28. The Atlanta Biltmore Hotel has been selected as headquarters. Room reservations should be made directly with the hotel.

Inquiries or suggestions concerning the program of the 1951 Conference should be mailed to the conference chairman, L. H. Pickens, *News-Piedmont*, Greenville, S. C.

The chairman of the Supply Men's Group for 1951 is Harry L. Leyland, Wm. C. Herrick Ink Co., 4398 San Jose Lane, Jacksonville 7, Fla. Inquiries concerning arrangements for supply and equipment exhibits should be addressed to Mr. Leyland or to the conference secretary. Ray B. Crow, SNPA Labor Dept., P. O. Box 1569, Chattanooga, Tenn.

Belt Troubles— Flanged Pulleys



Where flanged pulleys are not properly aligned, the accompanying sketch shows what often happens or is likely to happen. The belt tries to climb one of the flanges, and as a result the climbing edge of the belt becomes worn and frayed, or it stretches. Sometimes the belt actually succeeds in climbing the flange and jumping off the pulley.

This "climbing action" is commonly caused by belt dressing or dirt accumulating on the pulley. The accumulation "piles up" until it is higher than the pulley crown, and since a belt always moves over to the higher side it is thereby pulled over against the flange. To avoid such behavior be sure that the pulley is amply wide so that the edges of the belt do not touch the flanges when alignment is correct. Then maintain true alignment; and keep the surfaces of the pulley face and belt clean.

Conference Dates (*with organization names and principal officers*)

American Photoengravers Association — 1951 Convention, Netherland Plaza Hotel, Cincinnati, O., October. W. K. James, President; Frank J. Schreiber, Executive Secretary, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—1951 Conference, Edgewater Beach Hotel, Chicago, June 11, 12 and 13. Chairman of the Committee, L. J. Griner, Production Manager, Detroit *News*. Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Fifth District Craftsmen's Conference — 1951 Conference, Claypool Hotel, Indianapolis, Ind., June 16 and 17. President, J. H. Clendenin, Indianapolis Blue Print Co., Inc., 600 E. Ohio St., Indianapolis, Ind.; Secretary-Treasurer, Robert Wolf, Richardson-Taylor-Globe Co., 4501 Mitchell Ave., Cincinnati 32, O.

Great Lakes Newspaper Mechanical Conference—1952 Conference, Hotel Statler, Detroit, January 13, 14 and 15. President, Joseph E. McMullen, Asst. Production Manager, Milwaukee (Wis.) *Journal;* Secretary, Al. P. Oberg, Flint (Mich.) *Journal;* Chairman, Mfrs. and Suppliers Committee, Edgar Flint, Howard Flint Ink Co., Clark Ave. & M.C.R.R., Detroit 9, Mich.

Illinois Newspaper Mechanical Conference—1951 Conference, Hotel Kaskaskia, LaSalle, Ill., September 22 and 23. President, John Barron, La Salle (Ill.) *News-Tribune;* Secretary-Treasurer, Wilbur L. Augspurger, Peoria (Ill.) Newspapers, Inc.

Intl. Assoc. Electrotypers & Stereotypers — 1951 Convention, Kenmore Hotel, Boston, Mass, October 23, 24 and 25. 1951 Spring Conference, Hotel Cleveland, Cleveland, April 12 and 13. A. P. Schloegel, Executive Secretary, 701 Leader Bldg., Cleveland 14, O.

International Association of Printing House Craftsmen—1951 Convention, Statler Hotel, Boston, Mass., August 19, 20, 21 and 22. President, Fred C. Baillie, 21 Iona, Ottawa, Can.; Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Graphic Arts Education Association—1951 Conference, Hotel Statler, Cleveland, O., June 17, 18, 19 and 20. President, George J. Bilsey, East High School, Cleveland, O.; Educational Director, Fred J. Hartman, 719 Fifteenth St., N. W., Washington 5, D. C.

International Typographic Composition Association—1951 Convention, Hotel Windsor, Montreal, Can., September 13, 14 and 15. President, O. B. Powell, Chicago; Frank M. Sherman, Executive Director, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference — 1951 Conference, Hotel Montrose, Cedar Rapids, Iowa, May 5, 6 and 7. President, L. T. Caldwell, Stereo Supt., Cedar Rapids (Ia.) *Gazette;* Secretary-Treasurer, Paul F. Kamler, Mechanical Supt., Clinton, (Ia.) *Herald.*

Kansas Newspaper Mechanical Conference — 1951 Conference, Broadview Hotel, Wichita, Kan., September 15 and 16. President, Glenn Cummins, Wichita (Kan.) *Eagle;* Secretary-Treasurer, Larry Miller, 701 Jackson St., Topeka, Kan.

Lithographers National Association—1951 Convention, Spring Lake, N. J., during the week starting June 25. Executive Director, W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Mid-Atlantic Mechanical Conference — 1951 Conference, Abraham Lincoln and Berkshire Hotels, Reading, Pa., April 5, 6 and 7. Conference Director, Theodore A. Serrill, PNPA Manager, Telegraph Bldg., Harrisburg, Pa.; Chairman, PNPA-NJPA Joint Committee, Ralph R. Cranmer, Williamsport (Pa.) *Grit.*

Missouri Newspaper Mechanical Conference — 1951 Conference, Bothwell Hotel, Sedalia, Mo., September 22 and 23. President, Earl H. Barker, Composing Room Foreman, St. Louis (Mo.) *Star-Times;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index.*

National Association of Litho Clubs — 1951 Convention, Hotel Cleveland, Cleveland, O., May 11 and 12. General Convention Chairman, Herb Johnson, A. S. Gilman, Inc., 623 St. Clair Ave., N. E., Cleveland, O. Executive Secretary, William J. O'Holleran, Assistant Supt., Myercord Co., 5339 W. Lake St., Chicago 44, Ill.

National Association of Photo-Lithographers — 1951 Convention, Statler Hotel, Buffalo, N. Y., September 5, 6, 7 and 8. Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.

National Printing Equipment Association, Inc. — President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.; James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — President, Howard E. Simons, Waterbury (Conn.) *American-Republican;* Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

Northwest Mechanical Conference — 1951 Conference, Radisson Hotel, Minneapolis, Minn., February 10, 11 and 12. President, Vernon G. Eck, Dunwoody Industrial Institute, Minneapolis, Minn.; Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

Pacific Mechanical Conference —1951 Conference tentatively set for Biltmore Hotel, Los Angeles, May 18, 19 and 20. President, L. M. Richardson, Mechanical Supt., Los Angeles *Herald-Express;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles *Daily News.*

Pacific Society of Printing House Craftsmen—1951 Convention, Phoenix, Ariz., date and hotel to be announced later. President, Allison W. Manners, 4137 Fifth Ave., Los Angeles 43, Calif.; Secretary-Treasurer, Isadore Margolin, 8924 S. Gremmercy Pl., Los Angeles 44, Calif.

Printing Industry of America — 1951 Convention, Hotel Statler, Boston, October 24, 25, 26 and 27. President, Robert H. Caffee, President, Wm. G. Johnston Co., Pittsburgh, Pa.; James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

Research and Engineering Council *of the Graphic Arts Industry, Inc.*—President, Frank F. Pfeiffer, Reynolds & Reynolds Co., 800 Germantown Ave., Dayton, O.; Official Headquarters, Bernard Taymans, 719 Fifteenth St., N. W., Washington 5, D. C.

SNPA (Eastern Div.) Mechanical Conference—1951 Conference, Atlanta Biltmore Hotel, Atlanta, Ga., August 27 and 28. Chairman, L. H. Pickens, Mechanical Supt., Greenville (S.C.) *News-Piedmont;* Secretary, Tom Tanner, c/o SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

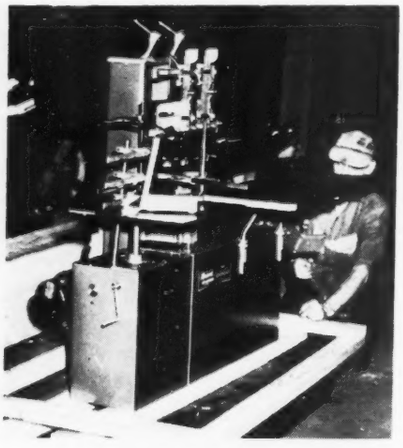
SNPA (Western Div.) Mechanical Conference—Chairman, Ralph Moffett, Mechanical Supt., Dallas (Tex.) *Times-Herald.*

Technical Association of the Lithographic Industry — (TALI)—1951 Meeting, Deshler-Wallick Hotel, Columbus, O., May 7 and 8. President, Dr. Marvin C. Rogers, Research Director, R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago; Secretary-Treasurer, Geo. W. Wilhelm, 814 N. East Ave., Oak Park, Ill.

Recent Equipment Installations

G-E Equipment Installed at Ohio Boxboard

The Ohio Boxboard Co., Rittman, O., has installed a General Electric multiple generator sectional drive with electronic-amplidyne regulators which, it is claimed, will operate a 128 in. paperboard machine at a max. speed of 550 f.p.m. Tension control for the high speed machines is provided by G-E paper tensiometers designed to keep a continuous check on the tension of the paper being produced by the machines. The sectional drive system consists of a group of 17 individual machine drives, each section mechanically independent of all other units.



Auto Stitcher Installed—The first machine from the production run of the Rosback Auto-Stitcher is shown being crated at the F. P. Rosback Co. plant for shipment to Sterling Printing Corp., Chicago. The bindery machine was sold by the Chicago office of the E. P. Lawson Co.

Lawson Installations

Fourteen installations of Lawson equipment have recently been made by the E. P. Lawson Co., according to David W. Schulkind, President. They are as follows: Drill Slotting Machines, Crown Sample Card Co., Inc., New York; Keith Clark Inc., Sidney, N. Y.; 39 in. Automatic Clamp Cutters, Rothschild Printing Co., New York; John E. Stewart Co., Inc., Springfield, Mass.; Raleigh Lithograph Corp., New York; United Offset Co., New York; 46 in. Hydraulic Clamp Cutters, A. T. Howard Co., Inc., Boston; Pyramid Bindery Inc., New York; Manifold Supplies Co., Brooklyn, N. Y.; 46 in. Electronic Spacer Cutter, Jason-Murray Press, New York; 52 in. Hydraulic Clamp Cutters, Reed Tissues Corp., Little Falls, N. Y.; Burrows Paper Corp., Little Falls, N. Y.; 52 in. Electronic Spacer Cutters, Franklin Printing Co., Inc., Philadelphia; The Trade Bindery, New York.

Wright Litho Installation — Recently installed by Wright Lithograph Co., Los Angeles, was a 35 in. by 45 in. Single Color Harris Offset Press. Wright Litho was founded in 1948 by Jack Wright (center) and Allan Whisnant (right). On the left is Ormel Duke, Harris-Seybold representative.

G-E Electronic Controls

By the end of 1950, General Electric Co. reported seven large newspapers operating with G-E Electronic Drives, and 18 other newspapers had placed orders for delivery. Installations of the drive have been made at the Philadelphia *Inquirer*, Buffalo *Courier-Express*, Dallas *Morning News*; Denver *Post*, Los Angeles *Times-Mirror*, Baltimore *Sun*, and New York *Times*. In a review of equipment developments during the past year, G-E reported Thy-mo-trol drives for Autopasters, ACA preset speed controls for offset metal decorating presses, and cut-off, side and color register controls were among the major electrical contributions made by the company in the printing industry.

Electric Boat Sales

One reorder and five initial installations for the E.B.Co 22 in. by 34 in. single-color offset press are reported by The Electric Boat Co. The second installation of an E.B.Co press was made at the Comfort Printing and Stationery Co., St. Louis. The five recent initial installations were made at The Maran Printing Co., Baltimore; Lithographic Associates, Inc., Rahway, N. J.; M. H. Davidson Co., New Haven, Conn.; Butler & Ferrigno Lithographing Co., Philadelphia, and Acme Printing Co., Inc., Everett, Mass.

Harris Presses Installed

Cuneo Eastern Press, Inc., Philadelphia, has installed six Harris Model TRG's, 45 in. by 65 in. rotary letterpresses equipped with double deliveries. The new presses are being used by Cuneo to produce color work for *Harper's Bazaar* and *House Beautiful*.

Kohler System Inquiries

Inquiries relative to Kohler unwinding and winding equipment should be sent direct to the Dilts Div. of the Black-Clawson Co., Fulton, N. Y. This change is due to the retirement of Franklin W. Kohler, former sales and engineering representative, from the Black-Clawson Co. John B. Kohler will continue as consultant for Black-Clawson with emphasis on the Kohler System and the Dilts converting line. He will make his headquarters at Fulton.

Non-Oscillating Re-wind Unit

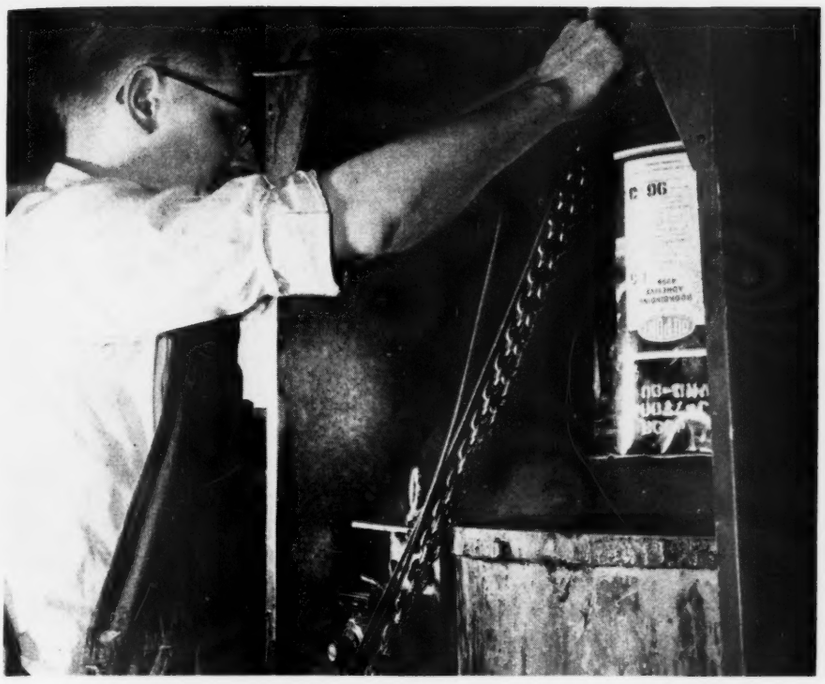
OSCILLATING tendencies in center-wind re-roll mechanisms are claimed to be eliminated in the Sperry Re-wind, according to the Ford Instrument Co. Designed for use with various types of web processing equipment, the Sperry Unit can be used for rewinding cellophane, paper, heavy board stocks, and the lighter gauges of sheet metals.

Finished rolls up to 44 in. diam. can be wound at high speed. Power for winding is supplied by a constant speed electric motor with Vickers variable speed hydraulic drive units under dancer control.

In operation, the re-wind roll is driven hydraulically at constant deceleration to compensate for the increasing diameter of the roll. A second, small, variable speed drive controls the stroking of the variable displacement main pump to provide the required constant deceleration. The dancer acts to maintain web tension. Any variation in tension is reflected by movement of the dancer in an amount sufficient to regulate the output of the servo mechanism, which in turn controls the rate of deceleration of the roll.

Since power for altering the velocity of the main drive is furnished by a servo mechanism, the dancer need supply only a small actuating force. Movement of the dancer is slight, for it governs deceleration, which is normally constant.

It is claimed that rolls produced on the machine are uniform in density and free of the danger of telescoping. Interlocks are incorporated in the equipment to prevent runaway in the event of web breakage.



Here the adhesive is put in a heating unit, which will melt it so it can be applied to the backbone of the book.

Revolution in Bookbinding

By PEG MINER*

*(Courtesy Du Pont Magazine, August-September 1950)

WHEN the art of bookbinding fell into step with machine methods, a new idea was born. About 50 years ago, companies in that industry started wondering: "Do we really have to sew or staple the pages together to make books? Why not glue them together using assembly-line techniques?"

The available glues, however, were bad actors. In the bindery, they were temperamental to handle. It took hours for them to dry, and millions of books were standing around in American binderies every day. That meant extra space, extra handling, and a costly delay in the flow of operations. In service, they picked up moisture from the air, weakened, and books started to fall apart. Or in dry climates, they dried out, got brittle, and failed just as badly.

Then in 1944 the W. F. Hall Printing Company of Chicago wrote to the president of Du Pont, saying in effect: "With your research facilities and background in bookbinding and adhesives, we think you can help us with our problem. Can you develop an adhesive that will dry quickly, so we can trim our books right after binding? It's got to be strong and flexible—and stay that way under all climatic conditions."

Here was a chance for the Fabrics and Finishes Department to make an original contribution to bookbinding. So its technical men set to work.

After an intensive research program and construction of a special pilot plant, they presented Hall and other firms, both large and small, with a completely new type of product—hot-melt adhesives based on a new synthetic resin.

Here were materials that were melted at high temperatures, applied to the backbone of a book, and would set immediately on cooling. Books could be trimmed right away, and the flexible bond was unaffected by humid weather. It looked like the old bottleneck could be broken.

Cooperating with the T. W. and C. B. Sheridan Company of New York, Du Pont engineers then worked on the problems of adapting machines to the new adhesives. To help iron out difficulties, Du Pont even built a complete bookbinding machine—a smaller replica of the giant units used in industry—in a laboratory of the Finishes Division at Parlin, N. J. The lessons learned from this engineering and chemical research made it possible for the binderies to swing into high gear.

The first widespread use of the new products was in the familiar "Pocket Books." More than a quarter of a billion of these economical little volumes are now in circulation. Says the director of manufacturing of Pocket Books, Inc.: "The use of Du Pont hot-melts has resulted in books that are more attractive to our readers, since they open flatter. We're very happy to adhesives don't change with changes in climate—and have the permanence and flexibility that were lacking in previous ones."

Next came certain types of catalogs, magazines, such as *Fortune*, and larger paper-covered books such as the $1.00 edition of the best-seller, *The Cardinal*. Even some makers of hard-back or "edition" books began to replace their time-honored stitching process with hot-melt adhesives. The trend in that direction seems to be growing—and may someday be industry-wide.

Where stapling is still used, Du Pont hot-melts are now being substituted for old-stype glues to bind the cover to the book. In this use, they give faster operation, greater strength, and better ap-

Large sheets of paper are printed, folded into signatures, then gathered by this machine.

Today, millions of sturdy books are made with hot-melt adhesives. Here the volumes, produced in pairs, are sawed apart.

pearance. When they're used with sewn books, they contribute again to quicker drying and more streamlined operation. Leading this change-over are the binders of magazines such as *Reader's Digest*, *McCall's* and *Redbook*, and books including the novel, *The Egyptian*.

Many binderies using staples or sewing today may be on the road to hot-melts via so-called "notch binding," a recent development of Du Pont and other companies.

New Adhesives Raise Problem

When the new hot-melts first came out, they had one serious drawback. The binders had asked for moisture-resistance —so that's what they got. Then they found themselves impaled on the saying, "Be careful what you pray for—you might get it." During trimming, a little adhesive was sliced off along with the paper, and got into the scrap sold to paper or paperboard mills.

Of course, the old water-sensitive glues dissolved with no difficulty in the paper beater. Not so with the hot-melts. When Du Pont chemists saw the papermakers tearing their hair over the gummy deposits that were fouling their machinery and spoiling their paper because of the new adhesives, they got busy. The result of further research was an improved type of product. It was just as moisture-resistant as the earlier ones, but in a water solution that contained only about 1/10 of 1 per cent of alkali solutions in their operations, the situation was well in hand.

The future is full of interesting possibilities—especially in the light of increased amounts of improved hot-melt adhesives soon to come from new equipment being added at the Parlin plant. New developments—like those of the past—will be possible because of the cooperation of progressive bookbinders such as the following who played a part in bringing hot-melts to their present commercial success: W. F. Hall Printing Company, Colonial Press, Inc., J. W. Clement Co., McCall Corporation, R. R. Donnelley and Sons Co., Inc., and Kingsport Press.

Speaking only for the present, though, we can say that hot-melt adhesives are filling a need of long standing. They are giving faster, better operation in industry —and the reading public can enjoy sturdier, more attractive books and magazines.

Changes Company Name

A change of company name has been made by the New England Newspaper Supply Co., according to a recent announcement. All business in the future will be conducted under the name New England Fibre Blanket Co. The firm will remain located at 164 Fremont St., Worcester, Mass.

New RIT Catalog

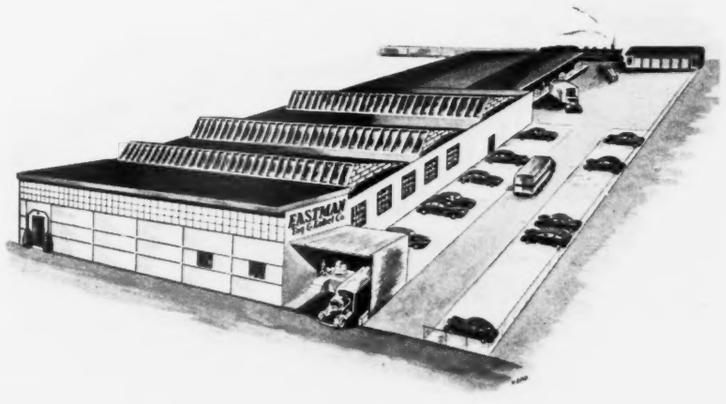
A 92 page catalog containing information on technical and educational courses offered at Rochester Institute of Technology, Rochester, N. Y., is now available. Included are complete descriptions of subjects offered by RIT's Publishing and Printing Dept. General information concerning entrance requirements, expenses, student activities, cooperative and full time courses, as well as numerous illustrations of the various laboratories at the Institute, are also included.

Water Safety Instruction

Red Cross Water Safety Service last year issued a record number of 728,607 certificates, passing the half-million mark for the third successive year.

MLCo. Annual Meeting

At the annual meeting of stockholders of Mergenthaler Linotype Co. held recently it was voted to increase the authorized capital stock from 300 thousand shares to 600 thousand shares without par value, and also to split each share of stock outstanding into two shares. The stockholders approved a Union Pension Plan, effective July 1 of this year, which covers Linotype employees represented by collective bargaining units.



Opens New Tag & Label Factory. Proclaimed one of the finest manufacturing plants in the United States, the new Eastman Tag & Label factory in Los Angeles swung into production recently. The new plant, located at 720 East 59th St., occupies 35,000 sq. ft. of floor space with an automobile parking area of 15 thousand sq. ft.

Organized in 1914 by Howard W. Eastman, directing head, the company, in addition to the Los Angeles plant, has factories in San Francisco, San Pablo and Seattle.

The new factory is a one-story reinforced concrete structure, earthquake proof and an overhead sprinkler system. A saw tooth roof with windows give north exposure light eliminating all glare in the factory. Fluorescent lighting is used abundantly and wall-type heaters throughout the building insure the utmost comfort to workers. The ground floor houses the factory and production department.

Adjoining the plant is an extensive warehouse which houses an immense stock of jumbo-size rolls of over 300 different grades and weights of tag-board, foil, cloth and papers, the basic raw products used to manufacture the thousands of different tags, labels and seals. Many of these grades embrace 16 colors of tag-board.

Mr. Eastman states, "We have made a very substantial investment in new machine equipment, all of which is automatic. There are 18 roll-fed tag, label and numbered check machines in our new plant with a capacity of several million tags per month. These automatic machines are designed for high-speed production in manufacturing tags, labels and seals accurately and efficiently."

All manufacturing steps are self-contained within the new plant. Type casting is done on Intertype and Ludlow casting machines. Specially designed equipment makes the rubber plates from which the company's products are printed. Strings are inserted in the tag holes and knots tied by stringing machines operating at a speed of 5 thousand tags per hour. Wires are inserted and twisted into position by specially designed wiring machines. Boxes to fit the hundreds of different finished sizes of tags and labels are accurately made on box making machines.

The Shipping Department is located in the front of the plant where the latest-type equipment is used in packing and to expedite shipments. Adjoining this department is the Stock Item department where over 500 items are kept in stock, ready for immediate delivery. Within the plant is a machine shop under the supervision of expert tag-machine specialists with all the necessary equipment to make repairs quickly to avoid lengthy shutdowns. A modern, coded call-system of lights and sirens calls superintendents, foremen and workers to various parts of the plant and to the telephone, to keep production running smoothly.

RECENT EVENTS TELL YOU WHY HERE'S YOUR SOUNDEST INVESTMENT

Cutler-Hammer 2 Motor Drives on the
CHRISTIAN SCIENCE MONITOR

These 10 press units with the Cutler-Hammer Drives print the daily weekday editions of the widely read, widely quoted Christian Science Monitor. The Saturday edition which includes a magazine section with frequent 4 color process covers and ads, is also printed on these presses.

Outstanding Features of C-H 2 Motor Press Drives

1 ***New Drum Type Control***—From start to printing speed in 20 seconds. 90 definite speed points give desired step by step control. No shocks or jerks. Web breaks eliminated. Smooth transition to main motor. Web accelerated in perfect unison with press. Packaged control, factory wired and assembled. Cuts installation costs and space requirements. Unit assemblies easy to remove and replace. 18 interlock circuits.

2 ***Magnetic Clutch***—Standard equipment. Replaces mechanical ratchets and pawls with smooth magnetic operation. Improves jogging. Gives pressman far better control of plate cylinder position. Fewer jogging operations needed. With new drum type control, it sets new standard of smooth starting. Eliminates transition trouble. Permits use of smaller main motor. Eliminates main motor brake.

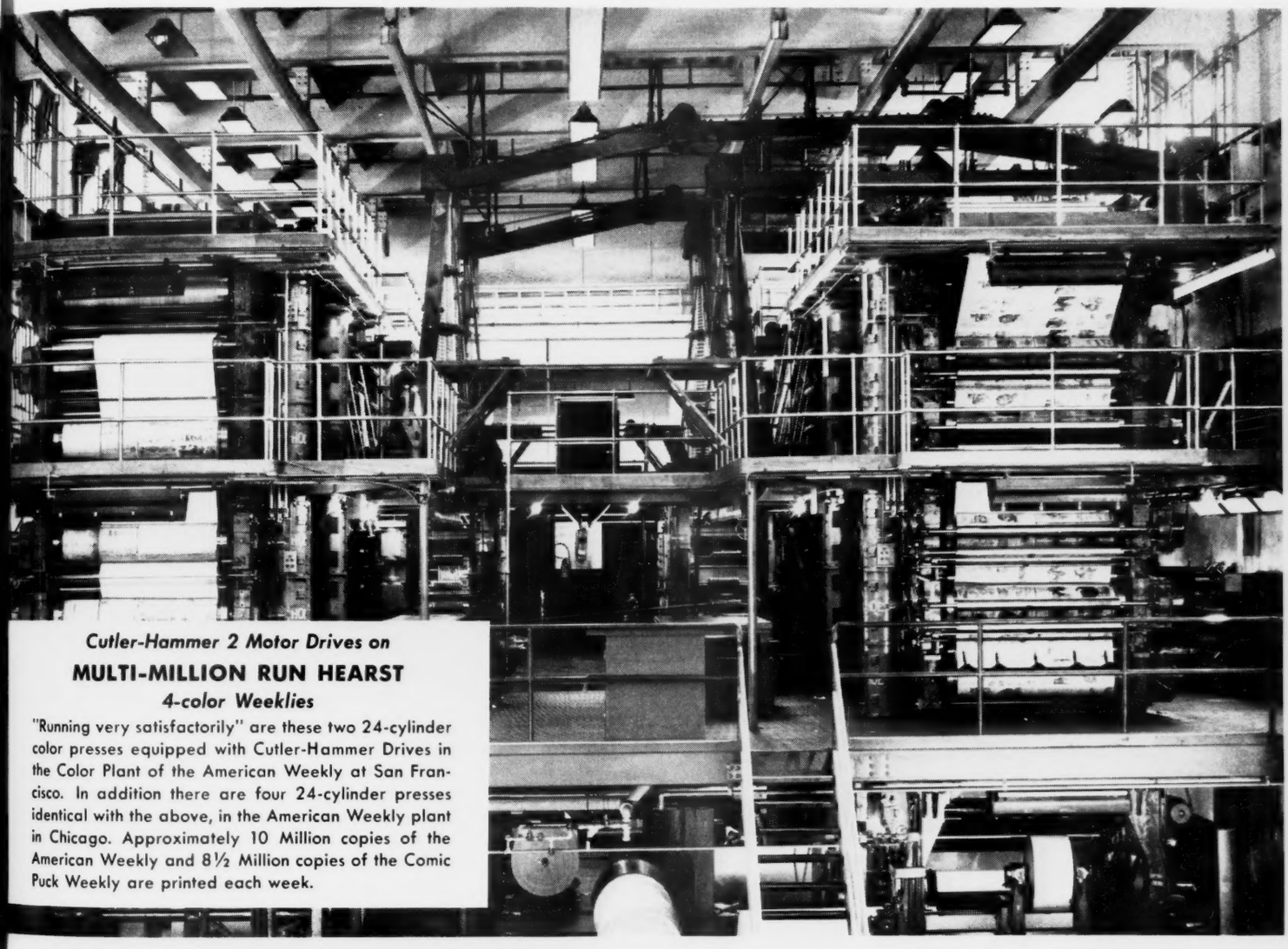
3 ***Components of proven design*** in common use everywhere. Easy to understand, service, maintain. No complications. C-H simplicity extends throughout, eliminating troublesome elements. This is the most efficient, lowest cost, most economical to install, to run, and to maintain of all drives.

CUTLER-HAMMER
PRESS DRIVES
C-H

4 ***In-line mounting*** reduces width of drive and increases accessibility for inspection and maintenance. Where more floor space is required, overhead suspension mounting is available.

5 Cutler-Hammer Medallion identifies an experience in the control of electric motors that has no counterpart in American industry.

The record of recent events in the publishing field *familiar to all* tells why a Cutler-Hammer Press Drive is the soundest investment you can make. Its design is so modern it will give you any capacity you will need in the predictable future. Its design is so intelligent that you gain this performance with simple, familiar, uncomplicated, easy to understand components, and with utmost economy in initial purchase, installation, in running and upkeep. And because of these factors its realizable asset value is high. This has been the story in the past when American and foreign publishing plants installed more Cutler-Hammer than any other press drive. It is the story today with major factors in the field making heavy investments in Cutler-Hammer equipment. It is only logical that this is so because Cutler-Hammer Drives *are* the very ingredients of efficiency, economy and dependability. This is *demonstrable*. Ask for a representative to call. CUTLER-HAMMER, Inc., 1460 St. Paul Ave., Milwaukee 1, Wis.

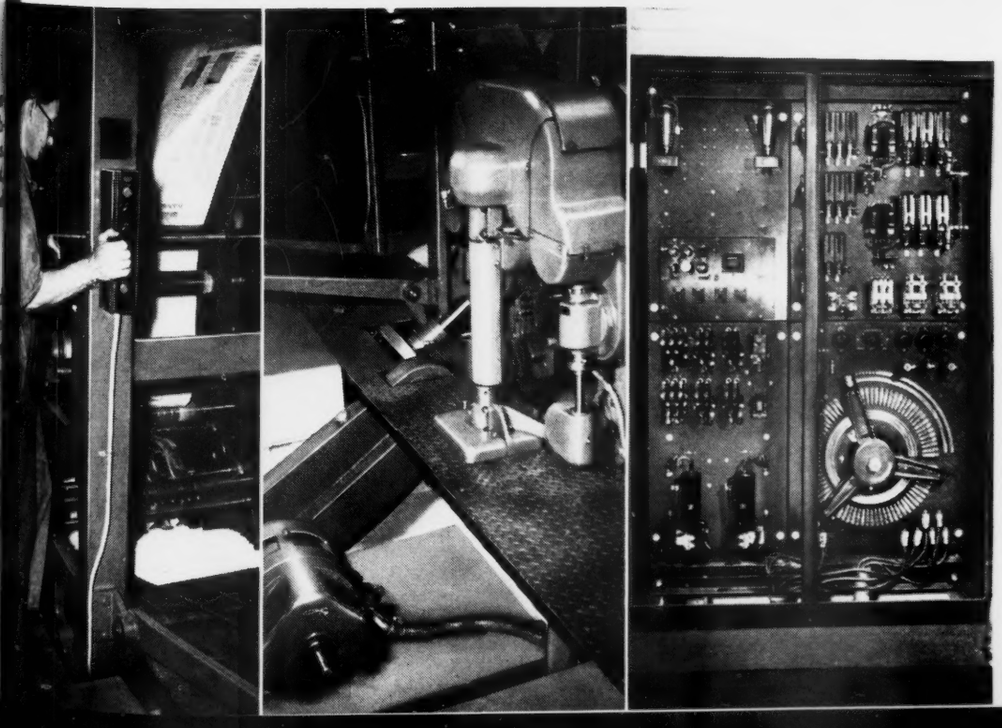


***Cutler-Hammer* 2 Motor Drives on**

MULTI-MILLION RUN HEARST

4-color Weeklies

"Running very satisfactorily" are these two 24-cylinder color presses equipped with Cutler-Hammer Drives in the Color Plant of the American Weekly at San Francisco. In addition there are four 24-cylinder presses identical with the above, in the American Weekly plant in Chicago. Approximately 10 Million copies of the American Weekly and 8½ Million copies of the Comic Puck Weekly are printed each week.



***Cutler-Hammer* Proved**

ELECTRONIC DRIVE

on Goshen, Ind., Newspaper

Cutler-Hammer engineers have developed a safe, practical, modern and dependable electronic single motor drive for tubular type newspaper presses and small magazine presses. Such a drive is now in operation on a Goss Press at Goshen, Indiana, printing the Goshen News Democrat. This drive has proved so successful in utilizing the characteristic advantages of electronics that it is being copied elsewhere.

Patents

For The GRAPHIC ARTS

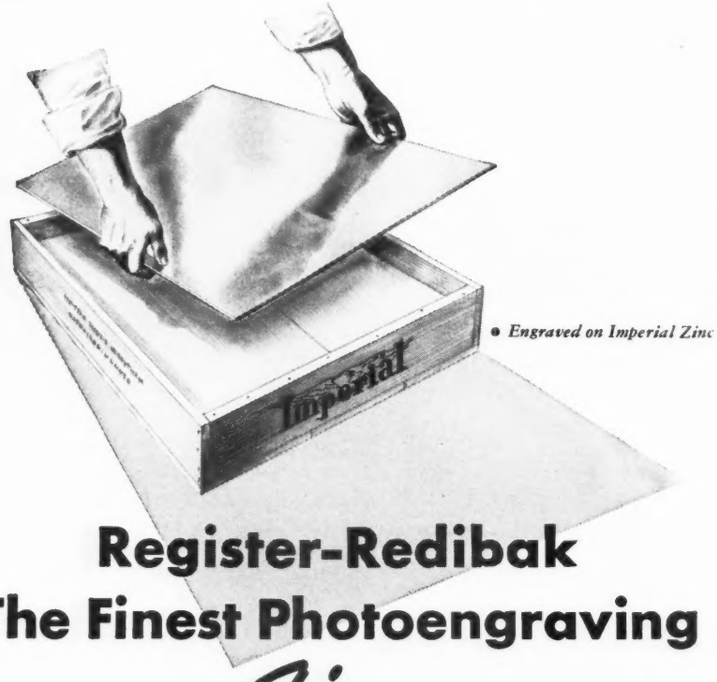
Covering patents issued December 5, December 12, December 19 and December 26.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating

2,532,443. BOOKBINDING MACHINE is adapted for frictionally feeding or threading a spiral binder into engagement with a stack of marginally perforated sheets. The arrangement is such that the feeding operation is discontinued in the event that the binder jams or an obstruction in the perforations in the sheets is encountered. The perforated stack of sheets is supported in a vertical position, the positioning means having curved hook-like parts which permit the perforations in the sheets to define an arcuate passageway. The machine is useful for books bound like the lie-flat stenographic notebooks now in use. Invented by Albert Freundlich, Bronx, N. Y. Assigned to Nu-Plast Binding Co., Inc. Flushing, N. Y. Application February 19, 1947. 17 claims.

2,532,535. TAPE THREADING MACHINE is provided for threading a plurality of flat tapes through binding holes of books, catalogs and the like. By means of an improved tape pickup mechanism a plurality of needles become simultaneously positively engaged with the tapes and the tapes are pulled through the binding holes simultaneously without detachment from the needles. Upon completion of the threading operation the tapes are automatically detached from the needles, and the tapes are automatically restored to tape pickup position upon severance thereof by a cutter. Lengths of tape from a plurality of tape sources of supply are fed to tape pickup mechanism. Invented by Arthur W. Biesen, Whiting, Ind. Assigned to W. B. Conkey Co., Hammond, Ind. Application October 3, 1946. 11 claims.



• *Engraved on Imperial Zinc*

Register-Redibak
The Finest Photoengraving
Zinc

• Imperial Register-Redibak is the finest photo-engraving zinc obtainable because it is processed from spelter to finished sheet under meticulous control in the most modern zinc plant in the industry.

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Composing Room Equipment

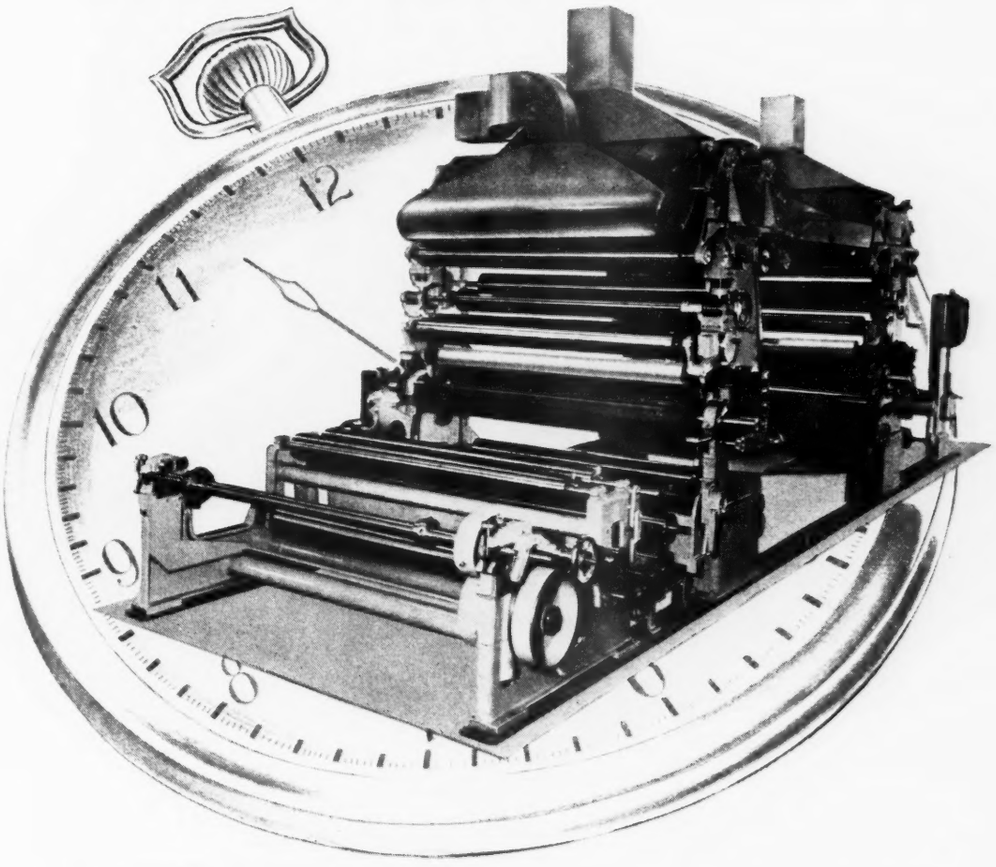
2,533,488. A MATRIX RETURN CHUTE for delivering matrices onto the teeth of the second elevator bar of a Linotype machine is provided. The chute body is elongated and near the front end of one side wall a matrix guide bar is mounted, directly beneath the top wall. The guide bar is recessed a short distance from the forward edge of the side wall and has teeth shaped and positioned in exact conformity with the teeth of the second elevator bar. Thus the front end of the chute can be hooked over the second elevator bar and the guide bar and elevator bar teeth can be brought into accurate registry for delivering matrices from the guide bar teeth to those of the elevator bar. Guide bar is rockably mounted and has a wedge shaped rear portion. Invented by Marshall S. Maust, Scottdale, Pa. Unassigned. Application July 15, 1947. 1 claim.

2,535,663. GUIDING BAR is located in the matrix receiver and assembling elevator of a Linotype machine, in position to intercept and engage the unseated matrices, as they are fed from the star wheel in usual manner, and properly seat the displaced matrices on the rail or supporting shelf in correct position. The guiding means is placed in the path of a displaced matrix after it passes through and leaves the elevator gate, in lieu of aligning the matrices before they enter the gate according to existing mechanisms. The guide provides a somewhat funnel-shaped path of movement within the receiver which guides or forces displaced or unseated matrices into correct position in the line. Invented by Monroe D. Almquist, Monmouth, Ill. Unassigned. Application December 31, 1946. 1 claim.

Feeding, Folding, Delivery

2,532,626. SIGNATURE HOPPER MECHANISM bodily feeds a stack of edgewise signatures by the frontward travel of a supporting bottom or web. A fine control of the stack feeding action is provided in a manner to keep pace correctly with the rate of gradual depletion of the stack while resupplies are

Nothing **FINER** *for the printer converter*



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ATF *Hourly Production Tables* are for cylinders from 12" to 48" in circumference, running from 100 to 850 feet a minute.

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added at the rear end of the stack or hopper. Fine adjustment is afforded in accordance with varying thicknesses of signatures. Invention provides improvements on the machine of patent No. 2,163,732 which was reissued as Reissue No. 21,489. Improved machine is said to operate reliably at the increasing speeds prevailing in the gathering of signatures and the production of pamphlets therefrom. Invented by Paul E. Kleineberg, Easton, Pa. Assigned to T. W. & C. B. Sheridan Co., New York, N. Y. Application July 31, 1946. 13 claims.

2,535,240. FEEDING MECHANISM is provided for feeding paper to a trimmer in the form of signatures or a pile or stack of sheets. The paper is fed rapidly and uniformly to a work position where it is delivered in accurate and predetermined centered relation with respect to a receiving member so that it may be clamped therein for trimming. The forward feeding movement of the paper takes place through a yielding connection in the drive mechanism which will yield if there is an obstruction to normal operation to terminate the feeding action at once to avoid possible damage to the machine. The feeding trough through which the paper moves is adjustable bodily, horizontally or vertically, with respect to its base to accommodate paper of different size and to effect delivery thereof with respect to the trimmer. Feeding fingers moving through the trough feed the groups of sheets. Invented by William R. Spiller and Edwin W. Bradmiller, Dayton, O. Assigned to Harris-Seybold Co., Cleveland, O. Application January 20, 1945. 28 claims.

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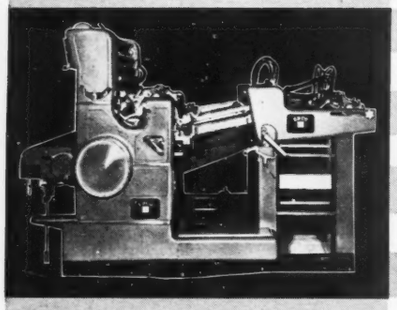

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Plate Making

2,532,390. NEWSPAPER MATS may be prepared by impregnating the gelatin relief of this patent with a solution of plastic materials which may be supported by metal. The first step in the process comprises forming photographically in a camera a reproduction of an object on a silver-halide sensitized gelatine film which is squeegeed onto a stable support, face down. After treating the supported film to various solutions, a moist gelatine image is obtained onto which a solution of a vinyl resin is applied. After drying resin, such surface is ready for printing purposes. Invented by Charles W. Bennett, Rochester, N. Y., and William F. Alexander, Cleveland, O. Assigned to Rochester Institute of Technology, Rochester, N. Y. Application May 28, 1945. 1 claim.

2,532,585. APPARATUS FOR THE PRODUCTION OF DOT-COMPOSED NEGATIVES. Small size half tone screens may be used for the production of large sheets such as placards, wallpaper, etc. The screen is made up of adjoining light and opaque spots and is movable in front of a stationary negative. Such screen is arranged to produce a dot-continuous image in step-by-step repeated exposures when moved for a single predetermined distance. Provision is included for moving the screen along the negative for a multiple of the combined width of light and opaque spots and for registry of negative and screen. A solenoid interconnected to an electric circuit is used to effect at least one of the movements of each of the members. Invented by Ludwig Mies van der Rohe and Walter Peterhans, Chicago, Ill. Unassigned. Application June 26, 1946. 4 claims.

2,532,701. METHOD OF MAKING INTAGLIO OR GRAVURE PRINTING PLATES. In making a resist for the improved type of intaglio plate in which the pockets vary both in area and in depth, the usual gravure screen is replaced by a structured transparency of the picture. This is a positive half-range, half-tone transparency. It has sepatated opaque portions of different areas which cover portions of resist which are to form cavities, and a transparent area surrounding opaque portion to expose portions of resist which are to form the walls of pockets. In assembling it with carbon tissue in a printing frame, a transparent spacer is placed between them. The carbon tissue is twice exposed through half-tone transparency and spacer without disassembling. One exposure is by direct light, the other by diffused light. Invented by William H. Falconer, Ridgewood, and Louis Calder Estler, Wortendyke, N. J. Unassigned. Application March 20, 1947. 3 claims.

2,532,730. APPARATUS FOR COATING PLATES is provided for applying a coating of asphalt to the rear surface of a metal plate that is to be dipped in an etching bath. Apparatus includes mechanism for feeding plate to a coating roller arranged to engage the surface to be coated, and a conveyor for receiving the coated sheet from the roller. The conveyor includes opposed angularly disposed sheet or plate sup-

port rollers for engaging only the lower corners of the longitudinal edges of the sheet. Invented by Ernest Penker, Flushing, and Martin Bulin, Jackson Heights, N. Y. Assigned to Etched Products Corp., Long Island City, N. Y. Application October 10, 1947. 8 claims.

2,533,145. THE STEREOTYPE MAT of inter-bonded felted fibers contains in the body thereof a water insoluble hydroxyalkyl ether of cellulose from ethyl to propyl inclusive. The proportion of the ether is such that there are from 0.25 to 1.5 hydroxyalkyl radicals to each unit of cellulose. Invented by Arlie W. Schorger, Madison, Wis. Assigned to Burgess Cellulose Co., Freeport, Ill. Application April 13, 1948. 6 claims.

2,533,650. PROCESS OF MAKING HALFTONE NEGATIVES comprises exposing spaced areas of a light sensitive medium to light passing from copy through small square stop aperture and exposing areas of said medium surrounding those first exposed and at a different time to light passing from the copy through a larger stop aperture of quadri-convexo-lateral outer perimeter surrounding an opaque area of approximately the same size and shape as the square aperture, the light passing during each of the exposures also through a cross lined halftone screen having an aperture width less than the line width, the diagonals of both said stop apertures being parallel with screen lines, the exposures being unequal and in register. Invented by Francis E. Wattier, St. Lambert, Que., Can. Assigned to Powers Photo Engraving Co., Glen Cove, N. Y. Application August 23, 1944. 2 claims.

2,534,784. PHOTOMECHANICAL PRINTING FRAME is for making large rotogravure and offset printing plates. A series of tubular light sources are vertically aligned and the frame carries a sensitized material and an image to be reproduced. The frame may be moved from a horizontal loading position to an inverted horizontal inspection position and from a horizontal position to a vertical exposure position near the lights. This is accomplished by mounting the frame on a pair of horizontal tracks which tracks extend from near the lights for a distance about one-half the length of the frame and a pair of pivotal supports, one projecting from the center of each side of the frame. Invented by John D. Maxwell, Glen Head, N. Y. Assigned to Powers Photo Engraving Co., Glen Cove, N. Y. Application January 11, 1949. 6 claims.

2,534,794. PHOTOMECHANICAL PRINTER. This printer is similar to that of patent No. 2,534,784 of this report. The means for moving the frame of this patent from a horizontal loading position to a vertical exposure position comprises a vertical track at each side of the frame parallel and in close proximity to the vertically aligned lights, a horizontal track at each side of the frame positioned with its forward end at the upper part of the vertical track, and a pair of supports projecting oppositely from each side of the frame. The supports are slidably shifted from its horizontal position to a vertical position, said vertical position being near and in proper parallel photomechanical printing alignment with respect to the vertically aligned tubular light sources. Invented by Frank T. Powers, sr., deceased, by Frank T. Powers, jr., Locust Valley, N. Y., and John M. Powers, Glen Cove, N. Y., executors. Assigned to Powers Photo Engraving Co., Glen Cove, N. Y. Application October 2, 1948. 4 claims.

Printing Inks

During the four weeks covered by this report no patents have been issued for this heading.

Printing Presses and Equipment

2,532,987. BELT GUIDE AND TENSIONING DEVICE. A guide is provided for a belt or web traveling over spaced carrier rolls. It comprises a bearing, a pintle journalled to the bearing and adapted to be oscillated about its longitudinal axis. A tension roller is supported for oscillation at one end of the pintle and has its longitudinal axis lying in a plane perpendicular to the longitudinal axis of the pintle. The longitudinal axis of the tension roller is offset from the axis of oscillation of the pintle. A lever assembly is connected to the pintle for oscillating the same. The lever assembly extends from the pintle in a direction opposite to that in which the longitudinal axis of the tension roller is set. Invented by Richard F. Berndt, Racine, Wis. Assigned to Virkotype Corporation, Racine, Wis. Application April 19, 1947. 7 claims.

2,533,012. ROTARY MULTICOLOR PRINTING PRESS is disclosed wherein three color cylinders and their inking

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mechanisms are disposed around one blanket cylinder, all of the cylinders being of the same size. The sheets are fed mechanically on to one cylinder and receive the contact from three geared-in, equal size, color cylinders, whereby three colors are supplied in absolute register. The use of three color cylinders is possible due to their being employed with an enclosed suction system as disclosed in Huckins' patent No. 1,775,667, for a Printing Machine. Invented by Arthur S. Huckins, Brookline, Pa. Unassigned. Application May 30, 1945. 3 claims.

2,533,834. THE NEW SYSTEM OF EMBOSSING is accomplished on a rotary press in such a manner that the embossing takes place through a rolling action and only a small area of the paper, therefore, is embossed at one time. The invention discloses a method of producing mating embossing dies on a press having a reciprocating base and a cooperating rotary cylinder. The method consists in first producing an intaglio plate corresponding to the embossing desired. The plate is secured on the press base. The press cylinder is coated with strips of gummed paper which are allowed to adhere to the cylinder. The paper is then stripped from the cylinder whereby to leave a portion of the gum on the cylinder to form a tooth. Soft cement is then applied on the gummed surface of the cylinder in conformable relation to the plate. The press is operated, thereby causing the cement to fit into the intaglio of the plate. Cement is allowed to harden. Invented by Hans Peter Otto, San Francisco, Cal. Unassigned. Application August 20, 1947. 1 claim.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D.C.

2,534,075. PRINTING PRESS BRAKE is used for regulating the rotary movement imparted to the freely rotatable ductor roller of a reciprocating flatbed press. Lower end of body member of brake is concaved to engage the reduced end of ductor roll shaft and has flanges to engage seats in a support. Mechanism for applying pressure to brake includes a curved shoe provided on its underside with a friction member for engaging the shaft. The shoe is supported by a ball and socket joint at the end of a stem passing through a hinged member and pressed downwardly by a spring. Brake can be latched in braking position by a handle arrangement, and it cannot be moved from latched position by vibrations and impacts resulting from operation of the press. Invented by Roland E. Sleight, Philadelphia, Pa. Unassigned. Application September 29, 1949. 1 claim.

2,534,670. THIS INK FOUNTAIN FOR OFFSET PRINTING PRESSES will function satisfactorily without agitation of the ink. This is accomplished by disposing the blade at a much steeper angle and at a point on the roller which will tend to cause the ink to flow downward by gravity and by the pull of the roller into the space between the roller and the edge of the blade. This effects sealing of the wall of the fountain against leakage. Cleaning is facilitated because the blade is hinged so as to swing away from the roller and provide a large opening through which the surface of the roller is made accessible. Invented by Charles W. Harrold, University Heights, O. Assigned to Harris-Seybold Co., Cleveland, O. Application March 13, 1946. 8 claims.

2,535,935. GRIPPER FOR PRINTING PRESSES. The manner of mounting this gripper allows removal of gripper with only slight loosening of the securing bolt. The gripper bar has a longitudinal groove and slots including a long arm having one end overlying the bar. Such end is formed with a bolt receiving notch and a recess contiguous to the notch extends into same. A clamping plate overlies the notched end of the arm and engages within the recess. Part of the plate engages the groove so as to prevent rotation of plate with respect to the gripper bar. A bolt extends through one slot in gripper bar and the clamping plate to clamp the plate and arm together. Invented by Chester L. Lance, Dallas, Tex. Unassigned. Application September 20, 1946. 7 claims.

Ideal's Cincinnati Office

The new location of Ideal Roller & Mfg. Co.'s Cincinnati office is Room 700, 626 Broadway, Cincinnati, O., according to an announcement by E. B. Davis, Vice President. Cincinnati District Manager is K. N. Cramer.

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Pressure-Sensitive Tapes

By M. S. Kantrowitz, Chairman, Research Committee, Washington Club of Printing House Craftsmen.

A COMMERCIAL product, designated Acetate Film Tape, has recently been developed for mending purposes. This tape is composed of cellulose acetate plastic material coated with a pressure-sensitive resinous adhesive which does not become soft or discolored upon aging. This tape is not provided with a paper backing and, therefore, does not require it to be removed prior to its use. Tests indicate that this acetate film tape will withstand a temperature of 100 deg. C. for a period of 168 hrs. without discoloration when attached to paper and does not show penetration of the adhesive into the paper. It is furnished in rolls of various widths in either mat or glossy finish ready for use.

A low tack paper masking tape, commercially designated No. 210 Masking Tape, of the pressure-sensitive type, has also been investigated and found to be suited for uses where it may be removed from paper surfaces without disturbing or pulling up of the paper fibers.

One such use is in the Cumulative Catalog Section of the Library of Congress. Library catalog cards are mounted on cardboard with masking tape for reproduction by offset printing, after which the cards are stripped off and returned to the files for future use.

Trouble had been experienced previously with the use of ordinary masking tape because they pulled the fibrous surface from the cards upon stripping from the cardboard backing, thus rendering them unsuitable for further use. No. 210 masking tape holds the cards firmly in place for the reproduction process and releases cleanly without pulling the fiber from the surface of the paper when stripped from the cards.

Another low masking tape, designated No. 250, is being used for fastening together certain sheets of tabulations which must be added to the assemblage at various times, thereby necessitating the removal and replacement of the tape with each addition without disturbing the surface of the sheets.

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Gravure Sheets

EXECUTIVE Cs

John W. (Jack) Miller, appointed Chief Engineer of F. P. Rosback Co. Miller will be responsible for the design of all Rosback equipment. He formerly held the same position with the Lindbladh Ruling Machine Co.

Edward Kuhn, appointed Divisional Vice President of International Printing Ink Div. of Interchemical Corporation. Kuhn has been sales manager of the IPI Southern District since 1947 with headquarters in Cincinnati, O. He will continue in this capacity with expanded responsibilities. He has been in the ink business since 1923 and associated with IPI since 1936.

More than 265 employees of The Challenge Machinery Co. joined J. Edgar Lee, President, recently in the celebration of his 85th birthday. The occasion also marked the 69th year of Lee's service with the company. He was presented with a gold wrist watch by E. P. Babcock, Assistant Sales Manager, on behalf of the Challenge employees. Fifty-year diamond service pins were awarded to Mr. Lee and B. S. Hanson, Secretary and Sales Manager. J. Wesley Lee, Vice President and son of J. Edgar, presided at the ceremonies.

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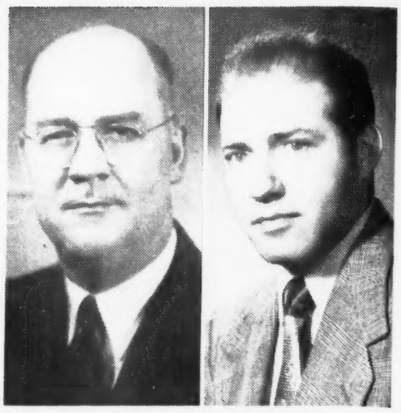
Joseph Reilly, Chairman of the Board of Electrographic Corporation, has announced the election of A. E. Giegengack as Vice President and Eastern Sales Manager of Electrographic Corporation. Giegengack will make his headquarters at the newly established New Haven Electrotype Div., 1175 State St., New Haven, Conn.

Electrographic Corporation consists of the following Divisions: Reilly Electrotype; Typographic Service; Photo-Lettering; Stone-Wright Studios; Vogue-Wright Studios; Midwest Body and Foundry; New Haven Electrotype; Michigan Electrotype and Stereotype; Advance Independent Electrotype; Lake Shore Electrotype; American Electrotype; and Reilly Plastic Type.

During World War I, Giegengack directed mechanical production for the *Stars and Stripes*, A.E.F. newspaper published in Paris. He later became foreman of De Vinne Press. He served as president of the Typographers Assoc. of New York, four terms as president of the New York Club of Printing House Craftsmen, and two terms as president of the International Assoc. of Printing House Craftsmen.

From 1934 to 1948 he was Public Printer of the United States. Just recently Giegengack was president and general manager of the Sixth Educational Graphic Arts Exposition in Chicago.



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NEW

Rouse

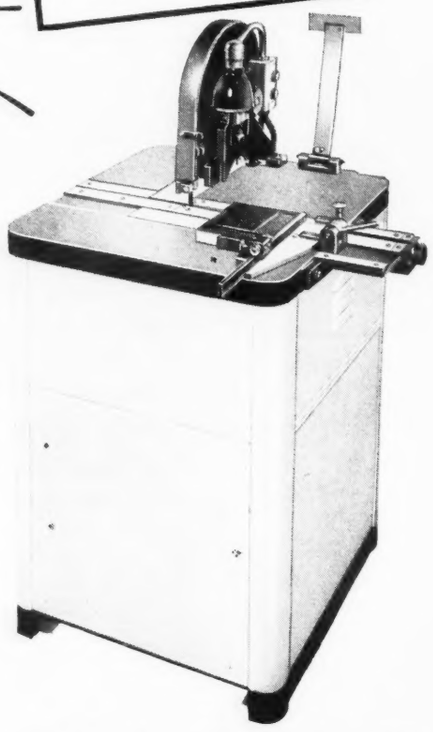

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Plate Saw

With Exclusive Automatic Feed!

For Photoengravers, Stereotypers, Printers...

COMPLETELY ELIMINATES ALL squaring up, guesswork alignment, tacking, scoring, beveling, trimming, removing burrs, and use of wedges. All edges are finished smooth. You make only four quick, easy, automatic saw cuts and the plate is ready for the printer.

Perfectly squared, smooth, uniform cut assured by *exclusive* Automatic Feed. Cuts up to 15" of type high work in only 17 seconds!

Cuts to Picas, Points and Quarter Points as well as to Inches—exactly as the printer wants!

Outside Mortising effectively done to pica and point measurement.

Equally effective on copper, zinc, or plastic plates, whether wood or plastic mounted or shellcast.

Saw blades hold a sharp edge for 30-40 hours of continuous operation . . . can be changed in just 1 minute! New blades cost only $1.50 each in lots of six.

Soon pays for itself by saving considerable expensive time. Occupies only 26" x 26" space.

DESIGNED BY MEN WITH 23 YEARS KNOW-HOW IN BUILDING BAND SAWS FOR PRINTERS!

Write for complete details TODAY!

H. B. ROUSE & COMPANY
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ROUSE PRODUCTS . . . The Standard of the World Since 1899

A Good Man to Know the Imperial Type Metal Man

The Imperial type metal man is a *specialist* in type metal procedure. He's a good man to know—particularly these days when the value of your metal supply is too great to gamble with. You can't afford to trust the maintenance of type metal quality to inexperienced help.

Imperial Type Metal plus Imperial Service assure metal uniformity . . . prevents imperfect casts, machine shutdowns and other production losses due to metal deterioration. You can relieve yourself of all type metal responsibility when you call in the Imperial representative, who will furnish: (1) periodic analysis of your metal, (2) Plus Plan Metal Control, (3) Dross Drum Service and (4) personal counsel—to insure satisfactory performance of your working metal supply day in and day out.

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TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

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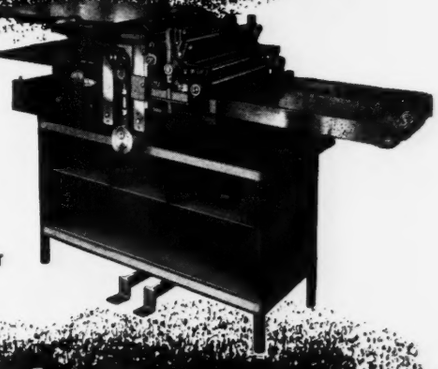
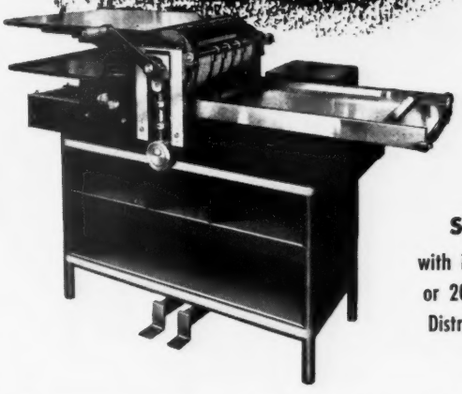


Style KP
with power inker

Style KA
with automatic inker

Challenge® SERIES K PROOF PRESSES



Style K
with ink plate . . .
or 20" Power Ink
Distributor (extra)

660

The name "Challenge" is the trade mark of *Cylinder Press Design* in all three styles of Series K Proof Presses. Each has a revolving cylinder with reciprocating bed on anti-friction rollers to produce clean, sharp proofs. Sheets are fed to cylinder grippers and micrometer side guide. A foot trip prevents offset on the packing during the return stroke. Grippers may be opened at any position of the cylinder. Two sizes handle anything from an ordinary galley proof up to 14½ x 23" or 19½ x 23½". All models equipped with sliding feed board, delivery board and zinc galley plate. Get details today!

THE CHALLENGE MACHINERY CO.

Office, Factories and Show Room: Grand Haven, Mich.

Challenge TRADE MARK (R)

Over 50 Years in Service of the Graphic Arts

DEALERS IN ALL PRINCIPAL CITIES

Joseph Reilly, Chairman of the Board of Electrographic Corporation, has announced the election of A. E. Giegengack as Vice President and Eastern Sales Manager of Electrographic Corporation. Giegengack will make his headquarters at the newly established New Haven Electrotype Div., 1175 State St., New Haven, Conn.

Electrographic Corporation consists of the following Divisions: Reilly Electrotype; Typographic Service; Photo-Lettering; Stone-Wright Studios; Vogue-Wright Studios; Midwest Body and Foundry; New Haven Electrotype; Michigan Electrotype and Stereotype; Advance Independent Electrotype; Lake Shore Electrotype; American Electrotype; and Reilly Plastic Type.

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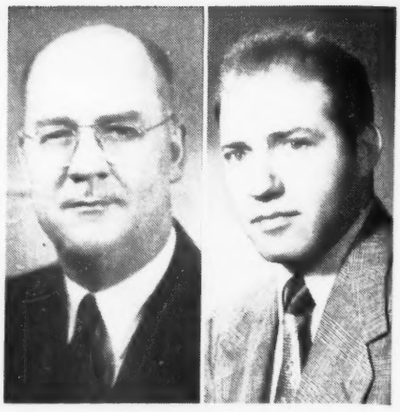

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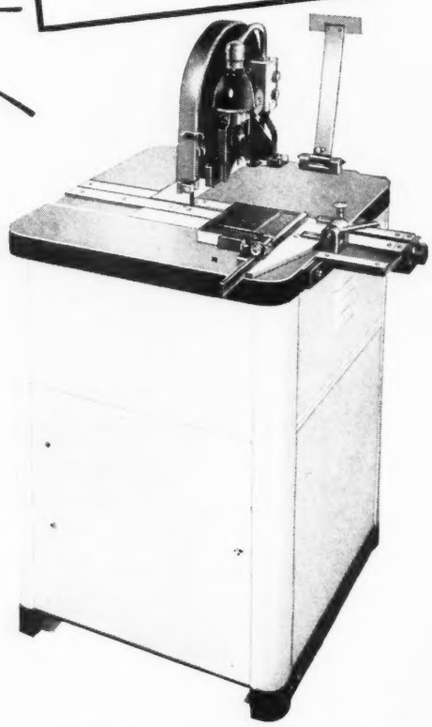

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With Exclusive Automatic Feed!

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COMPLETELY ELIMINATES ALL squaring up, guesswork alignment, tacking, scoring, beveling, trimming, removing burrs, and use of wedges. All edges are finished smooth. You make only four quick, easy, automatic saw cuts and the plate is ready for the printer.

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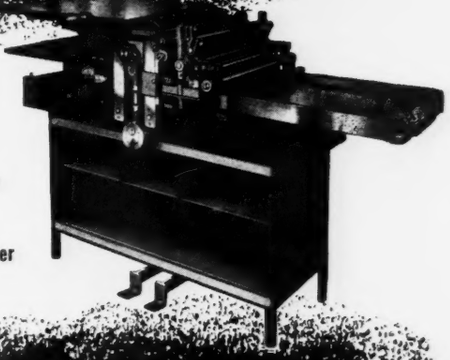
CYLINDER PRESS DESIGN MEANS BETTER PROOFS



Style KP
with power inker

Style KA
with automatic inker

Challenge® SERIES K PROOF PRESSES

Style K
with ink plate . . .
or 20" Power Ink
Distributor (extra)

660

The name "Challenge" is the trade mark of *Cylinder Press Design* in all three styles of Series K Proof Presses. Each has a revolving cylinder with reciprocating bed on anti-friction rollers to produce clean, sharp proofs. Sheets are fed to cylinder grippers and micrometer side guide. A foot trip prevents offset on the packing during the return stroke. Grippers may be opened at any position of the cylinder. Two sizes handle anything from an ordinary galley proof up to 14½ x 23" or 19½ x 23½". All models equipped with sliding feed board, delivery board and zinc galley plate. Get details today!

THE CHALLENGE MACHINERY CO.

Office, Factories and Show Room: *Grand Haven, Mich.*

Challenge TRADE MARK (R)

Over 50 Years in Service of the Graphic Arts

DEALERS IN ALL PRINCIPAL CITIES

HUNDREDS HAVE SAID:

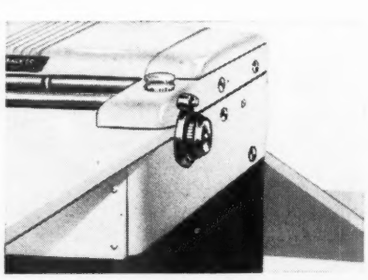
ROSBACK
"Twenty-Two"
LOW COST ROTARY PERFORATOR

• Why continue to fuss with makeshift perforating rules or a slower vertical perforator when the Rosback "Twenty-Two" Rotary Slot Perforator will give you a far better, more professional, faster job at less cost?

The Rosback "Twenty-Two" Rotary Perforator provides traditional Rosback accuracy and operating efficiency for the smaller plant. Here is a full-size machine that does a man-size job—takes a folio sheet either way through or up to 22 inches in width and does the finest quality slot perforating, both continuous and strike. If desired, at small additional investment, the Rosback "Twenty-Two" can be equipped to do snap out perforating, slitting, scoring and creasing with special heads. (Four standard lengths of slot perforations available; nine standard lengths of snap-outs.)

Equally important is the low price — so that the "Twenty-Two" is really designed for the smaller plant that must compete in spite of today's high costs.

When you see the Rosback "Twenty-Two" you'll say as hundreds have said: "That's the perforator for me!" Ask your Rosback Dealer for full details; or, write us for bulletins, specifications and price.



FAST, ACCURATE ADJUSTMENT
Any length strike up to 20" is quickly set by simply turning a knob to inch-and-fraction markings.

F. P. ROSBACK COMPANY • Benton Harbor, Mich.

LARGEST PERFORATOR FACTORY IN THE WORLD

of London, Eng. and received his early schooling in Scotland. He was graduated with a B.S. degree in chemistry from the University of Buffalo in 1925. He is a former president of the Kodak Camera Club, an associate of the Royal Photographic Society, member of the Rochester Technical Section of the Photographic Society of America, member of the Rochester Academy of Science, and a member of the research committee of the Lithographic Technical Foundation. Mr. and Mrs. McMaster live on Hoffman Road, Irondequoit. They have one son, Douglas.

Jack Watson, has been appointed Director of Market Research for the Industrial Products Dept. of J. M. Huber Corp., according to an announcement by R. H. Eagles, Vice President. Watson will investigate the applications and uses of new products and Huber clays in the paper and adhesive industries. He formerly served the company as manager of technical services, laboratory director and production manager in the Ink Division.

John L. Davis, former assistant director of sales for the Mergenthaler Linotype Co. died suddenly January 16 at his home in Brooklyn, N. Y. He was 65. He joined the company 25 years ago and served as the manager of the Southern Agency in New Orleans for 13 years prior to his appointment as assistant director of sales in 1948. When Mr. Davis began his career with the Linotype company as a field representative, he covered Alabama, Georgia, South Carolina and Tennessee. He was named assistant manager of the Southern Agency in 1935. His wife, Mrs. Sarah B. Davis, survives him.

B. C. Polglase, jr., has been named Works Mgr., of the Mount Vernon, (O.) plant of Shellmar Products. Corp., An ME from Michigan State College, Polglase has been General Superintendent of the Hanover (Pa.) plant of Doubleday & Co., Inc. Prior to this, he was chief engineer of the American Colortype Co., Chicago; assistant chief engineer of Lehmann Machine Co., St. Louis, and for a number of years was in charge of design on newspaper and magazine printing presses for Goss Printing Press Co.

Ralph C. Persons, Vice President of Sun Chemical Corp., has announced that Thomas J. Craig succeeded E. J. Kelly as General Manager of the E. J. Kelly Co. Div. Kelly will continue his services on a part time basis. Craig joined Sun Chemical Corp. in 1944 after serving as Chief of Protective Coatings Branch, Chemicals Bureau, W.P.B.

Claud Brown was elected recently to succeed A. Wallace Chauncey, who has resigned, in the office of Treasurer of Interchemical Corporation. Brown is now a Vice President of the International Printing Ink Div. of the corporation. Chauncey will continue with the firm as a director. F. A. Weymouth, Divisional Vice President of IPI, will take over Brown's responsibilities in manufacturing, labor relations and procurement.

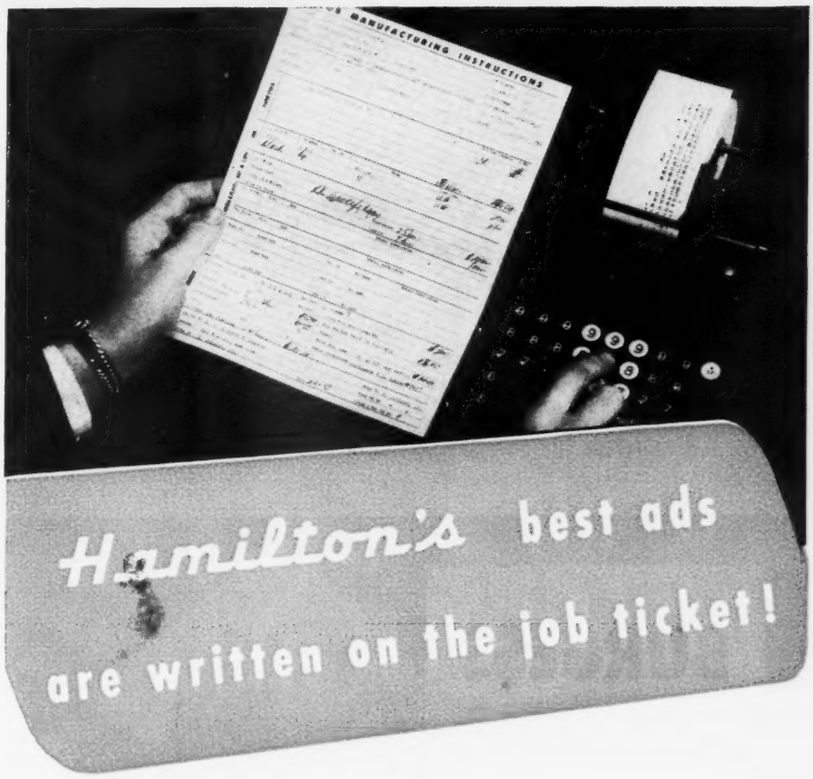
D. E. Loushay has been appointed President of Roberts Numbering Machine Co. Loushay formerly was associated with Great American Industries as general manager of the Linn Coach & Truck Div., Oneonta, N. Y.

C. Parker Loring, named Vice President in Charge of Sales of the J. C. Hall Co., Pawtucket, R. I., according to an announcement by Norman B. Smith, President. Loring, formerly with Rand Avery-Gordon Taylor, Inc., is a graduate of Bowdoin College. He has also been associated with Evans Printing Co., Concord, N. H. It was also announced that Albert F. Priest has resigned as General Manager of the Hall firm.

Harry G. Baumann, Vice President of Wm. A. Force & Co., Inc., retired recently after 48 years of association with the company. Baumann was in charge of selling and merchandising in addition to his executive duties in latter years. He was presented with a wrist watch at a farewell dinner party given in his honor by associates. He will continue to reside at Laurelton, Long Island, N. Y.

Thomas Roy Jones, President of ATF Incorporated, announced recently that George J. Parker has joined the organization as Vice President in Charge of Defense Production. Parker will direct all manufacturing activities on parent company contracts related to the national defense program, according to the announcement.

Russell S. Stratton, Inverness, Fla., formerly Production Mgr. of the St. Petersburg (Fla.) *Times*, has been retained as a consultant by the Mergenthaler Linotype Co., it was announced



In thousands of plants from coast to coast, the installation of Hamilton equipment puts composing room profits up where they belong. That's because every unit of Hamilton *Peak-Production* Equipment is specifically designed to take the profit-killing leg and muscle work out of composing room operation.

Hamilton equipment gives good men a chance to do good work—there it is, short and sweet. The design of any Hamilton unit anticipates a man's working needs . . . rugged work surface, plentiful storage space, everything right where it should be. Nothing accidental about this, for Hamilton knows more about composing rooms than any other equipment manufacturer.

You'll never get the results you want from your composing room if it's limping along with inefficient, outmoded or inferior equipment. A proven prescription for profit is Hamilton *Peak-Production* Equipment—why not get all the facts from your Hamilton Dealer? To insure delivery, act now.

1051C02 IMPOSING TABLE
A profit-making table for plants using several small cylinder and platen presses. Toughened semi-steel polished top, plentiful galley, furniture and regular storage right where you want it. Other tables available to meet any requirement.

Hamilton PEAK-PRODUCTION equipment

HAMILTON MANUFACTURING COMPANY • TWO RIVERS, WISCONSIN

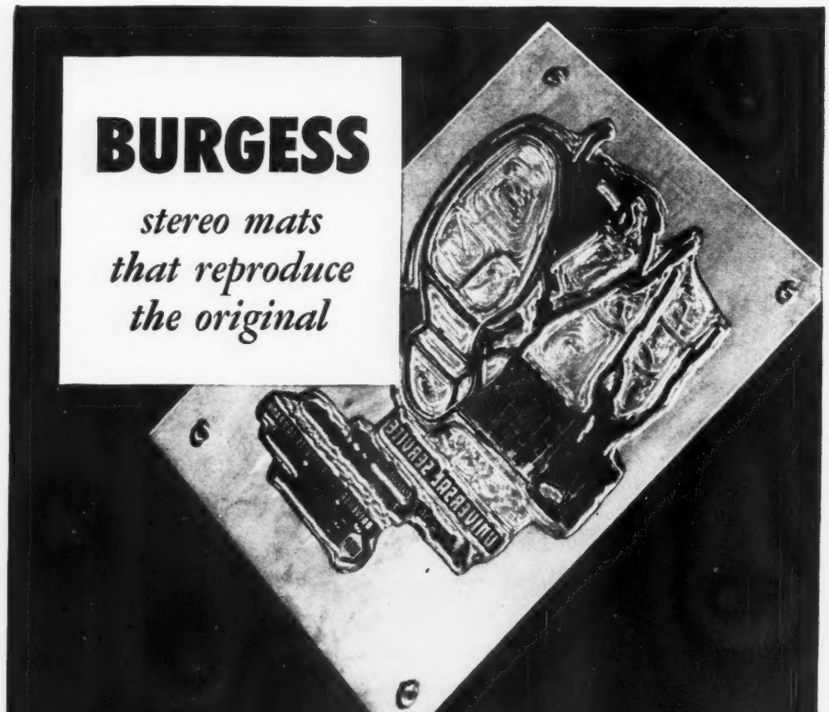
by Gordon B. Welch, Linotype's Vice President in Charge of Research. Mr. Stratton has been a consultant for Perry Newspapers in Florida and a former member of the ANPA Mechanical Committee, has been working on a Teletypesetter operation manual to be issued by Linotype.

Charles H. Merbitz has been appointed Sales Representative of the Type Metal Dept. of Federated Metals Div., American Smelting and Refining Co., according to an announcement by William H. Pollock, Manager, Eastern Type Metal Dept. Merbitz will make his headquarters at Federated's Philadelphia sales office. His territory will include Pennsylvania, Delaware and Maryland.

Montgomery Price Change

Montgomery Company, Inc., has announced that effective December 30, 1950, the company's old price list has been withdrawn and all future billings will be approx. 15 per cent higher. Orders now on hand, it was stated, will be filled at the old prices, but future orders dated after December 30 will be billed at the new prices.

On January 10, in Fort Worth, Tex. the United States Court of Appeals found Switzer patents valid and infringed by the manufacture, sale and use of daylight fluorescent signs and sign fabrics made without a license from Switzer Brothers, Inc., Cleveland.



Good quality line reproduction depends upon a number of things... the ability of the stereo mat to make a faithful mold of the pattern and to deliver a clean, sharp casting, for example.

Burgess mats have proved their superiority in hundreds of stereo shops and newspaper plants with a new high in quality... with results that reproduce faithfully the original whether it be line or halftone work. This same high quality is available to you whenever you specify Burgess mats.

BURGESS CELLULOSE COMPANY
Manufacturers and Distributors of
Burgess Chrome and Tone-Tex Mats
FREEPORT, ILLINOIS

A Laboratory Product
BURGESS
Chrome
MATS

Great Lakes Conference

(Continued from Page 53)

to personnel administration within his department. "He recognizes that he cannot do the job all by himself but must of necessity get the job done *through* people; so he begins to live the personnel policies of his company and he treats his people properly, he sells the company to them, he develops within them the feeling that the company is a good place in which to work, that the results and objectives are reasonable and desirable. He develops enthusiasm among his people," related Mr. Plum.

Mr. Plum asked a question: "Now, what effect does this have on the operations of this department? Isn't it reasonable to assume that because these people, through proper personnel administration, have developed a desire and an urge to do the job well; that the efficiency would be greater, productivity increased, errors reduced, absent time reduced, force losses reduced with the result in savings in training time? Could not all these things happen? They can and they have."

With respect to the supervisor who has met these successes in a department, the speaker stated: "The supervisor will make progress because he has demonstrated that he can get effective results through people. Those are the kind of people top management is looking for."

Mr. Plum asserted that the top of the organization (management) must be impressed with the need of personnel relationship between management, supervisory force and the rank and file employee; otherwise, a personnel program cannot be made to work. In response to a question from the audience as to how to go about establishing personnel relationships when management doesn't do anything about it, Mr. Plum replied: "Brother, you've got a sales job on your hands."

One executive asked the question: "How would you introduce a personnel program?" Mr. Plum outlined the procedure briefly by stating that a meeting of top management should be called, at which time objectives should be outlined. A program should be formulated. Next, the supervisor should be made thoroughly familiar with the policies. Group meetings of supervisors should be held. A training program should be instituted according to the needs and size of the plant. "The human element means more to management than any other one thing,' said Mr. Plum.

Personnel and Production Problems

John A. Foy, General Mgr. of the Dayton (O.) *Daily News & Herald*, was next introduced by Harry Miller, Mechanical Supt. of the Dayton (O.) *Daily News*. Mr. Foy's address was entitled, *Personnel and Production Problems*.

Foy's Address Stimulating

Mr. Foy related: "Our approach to the practical application of a sound policy in working and living with the people employed by the Dayton *Daily News* emanates from first principles in human relations. In actual practice, we recognize our employees as individual men with or without organizational ties or agreements reached in collective bargaining sessions. Secondly, we distinguish between men and machines. Our machines are things and our employees are people."

The speaker said there is little or no need for disciplinary action. This, in turn, provides unusual security for the individual and provides the *News* with a very stable working force substantiated by long service records of considerable versatility and flexibility. There has also developed a pride in achievement and an open-mindedness in trying for the best results.

Mr. Foy reviewed the conditions which existed in the past with respect to the status of the foreman. He said: "He was an autocrat who, often times, had moved to the top by seniority alone, gave an order to please himself, ran his department with an iron hand, was a manufacturing isolationist who was not above making deals to maintain his little empire as a separate entity. This practice definitely contributed to multiple shop operation under one roof and destroyed the general desire to gain knowledge of related processes which must be integrated to produce a single newspaper."

He said that during the post war period the *News* had an inadequate supply of competent journeymen and was operating without a mechanical superintendent. Consequently, it was necessary to institute nearly complete rehabilitation of mechanical departments to meet press operating requirements not to mention training and revamping to establish competent shop organization.

In 1947, a mechanical superintendent and new foremen were chosen. Departmental executive meetings were held and during the reorganization period it was clearly stated to department heads that the old bromides were unacceptable answers to specific problems. "We were not interested in collecting scalps," said Mr. Foy.

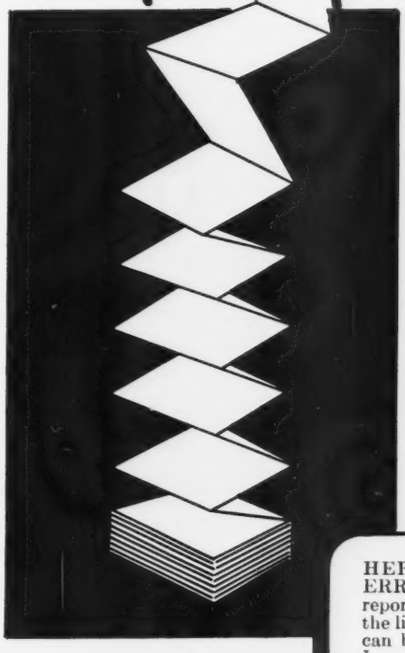
Also at about this time, meetings with various shop committees were held monthly to correct conditions which if corrected promptly, can eliminate resentment, antagonism, unintentional action and misunderstanding. "These committees," Mr. Foy explained, "are not grievance committees although in some instances there may be an overlap in membership. For example, we discuss lighting, locker room facilities, overtime, advertising service delays, proofreading, Industrial Commission accident reports, drinking, ventilation, vacation clause interpretation, etc.

"Some of the lessons learned from these early meetings", said Mr. Foy, "indicated we erred in not having the foreman in attendance. Occasionally, matters were brought up with which he was more than passively concerned and opinions expressed which were counter to his. Also, an early impression developed that the foreman could be bypassed. Measures were taken and foremen are now expected to be in attendance at all meetings." In referring to the value of various shop committee meetings held monthly with the foreman of each department in attendance, Mr. Foy stated: "All indications are that we are on the right track and that with patience and further experience, success is inevitable."

Composing Room-Machinists' Session

AN innovation in this year's program at the Great Lakes Mechanical Conference consisted of combining the Composing Room and Machinists' Sessions into one. *Printing Equipment Engineer* can't help but wonder if the combined session will be repeated at future conferences. It became evident during

Especially Designed



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HERE'S INSURANCE AGAINST THOSE ERRORS inherent in verbal instructions, oral reports, incorrect translation of scribbled notes, and the like. From 1 to 5 copies of a message or report can be typed simultaneously on PERFECTION Log Forms without physical handling of paper and carbons. *Ideal for interdepartmental correspondence; classified ad departments; city editors; incoming telephone calls* where accuracy is of vital importance. Designed by communications men for communications work, PERFECTION Log Forms save time, effort — and costly mistakes.

On request, our representative will gladly call and explain the many additional advantages of PERFECTION Log Forms.

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the session, although the discussions are of mutual interest, that it would be better to separate the two sessions as in the past. Composing room superintendents are interested chiefly in composing room management, personnel, deadlines, production, etc., while the machinists have many mutual problems related to machine operation, maintenance and adjustment.

Deo A. Padgett, Composing Room Supt., Cleveland *Plain Dealer*, together with Theodore R. Gardiner, Chief Machinist of the Indianapolis (Ind.) *Star-News* composing room, comprised the officiating personnel of the session.

Chairman Padgett introduced Walter (Pop) Crighton, Composing Room Supt. of the New London (Conn.) *Day*, who also is Secretary-Treasurer of the New England Newspaper Mechanical Conference. Mr. Crighton addressed the meeting briefly.

The first speaker to be introduced by Chairman Padgett was Dr. R. Hunter Middleton, Director of Type Face Design, Ludlow Typograph Co. During his address he exhibited a number of comparative charts illustrating the basic principles in type design. He traced the origin and progress of the alphabet from earliest times to the present day. He also discussed good taste in typography with respect to display composition for advertisements and for certain types of commercial work.

Rene Leach, Midwest Manager, Mergenthaler Linotype Co., presented a film illustrative of the new Comet Teletypesetter-operated Linotype. (See October 1950 issue of *Printing Equipment Engineer* for full explanation of the Comet).

Co-chairman Ted Gardiner introduced Walter Severin, Assistant Mgr., Chicago Agency, Intertype Corporation. Mr. Severin presented a moving picture entitled *How Matrices Are Made*. A section of this film was devoted to the possible causes of damage to matrices during operation of a line-composing machine. This film was complete with respect to description of matrix manufacture.

Because of the length of the program and the time allotted for the combined Composing Room-Machinists' Session, Phil Hammond of Intertype Corporation was not permitted to conduct the problem section related to operation, adjustment and care of line-composing machines. Some good-natured bantering, however, occurred between Chairman Padgett and his Associate Chairman, Ted Gardiner, with respect to a machinist finding an opportunity to sit upon his fanny during production hours. George Bolton, jr., Machinist of the South Bend (Ind.) *Tribune*, remarked that in his plant the machinists are kept busy during production hours by doing repair work in the machinist room or doing such work as could be done while the machines are being operated. He stated: "Occasionally when the operator leaves the machine, we get an opportunity to do repair work."

Today's Critical News Can't Wait!

There's a vital urgency about today's news. Every minute of every hour, eager hands are reaching for the LATEST papers.

These days, more than ever, you want every edition to hit the street on time.

Make every minute of press time count. Pack your presses with VULCAN blankets and get a crisp, pleasingly printed paper with less bother and delay . . . longer runs without packing adjustments.

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Mailing Room Session

A RATHER extensive number of speakers and sound movies had been provided for the Mailing Room Session. Seven speakers were scheduled but due to the shortness of time caused by encroachment of the Composing Room-Machinists' Session, the mailing room meeting was abbreviated.

George Feldt, Mailroom Supt. of the Milwaukee *Journal*, and Otto Lepp, Mailroom Supt. of the Milwaukee *Sentinel*, presided as chairmen of the meeting.

Peter de Florez of The de Florez Co., preliminary to showing a moving picture of a prototype model stuffing machine in operation in the plant of the Baltimore *News-Post* and *American*, discussed the machine which was developed by his engineering company. He explained that the machine had undergone three months of service trials and progress is satisfactory. It is the intention of Mr. de Florez to design the machine so that from 4 to 96 page inserts can be handled by the machine itself. (See illustrated story about the stuffing machine on Page 134, December 1950 issue of *Printing Equipment Engineer*).

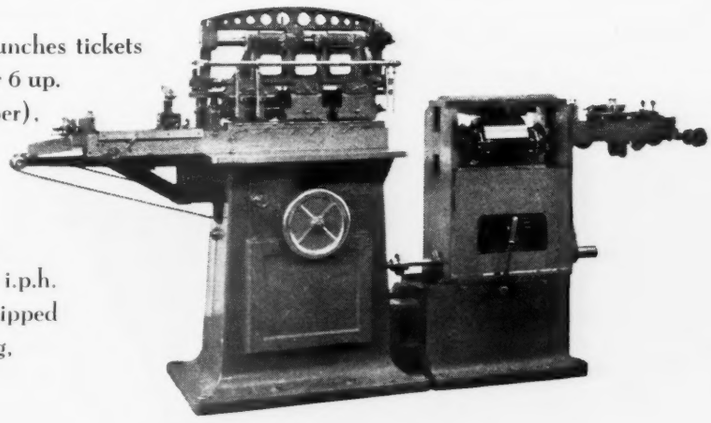
W. A. Lefevre representing the T.W.& C.B. Sheridan Co., showed a movie of the Sheridan Newspaper Stuffing Machine in which all of the new developments to date were incorporated.

A. E. Katz of the engineering department of the Toronto (Ont.) *Star*, pre-

This ad set in Libra, Egmont Family

Amsterdam Continental answers the ticket-printer's demand for speed, volume, rugged performance with ROLCA TICKET PRINTING PRESS

Prints, perforates and punches tickets in sizes up to 6½ inches long. Prints 1, 2, 4 or 6 up. Three colors front (or two colors and one number), 1 color back. Features quick change-over from one job to another — takes only minutes! Web-fed, takes paper, cardboard, gummed or ungummed stock. Speedy, volume producer, up to 12,000 i.p.h. on non-gummed stock. Can be equipped for varying width webs, consecutive numbering, slitting and cutting of single tickets. Sturdy, simple to operate, all parts easily accessible.



Write for full data, or come in, see for yourself in our showroom.

AMSTERDAM CONTINENTAL TYPES AND GRAPHIC EQUIPMENT INC.

268-276 Fourth Avenue, New York 10, N. Y.

HANDLE HEAVY NEWSPRINT ROLLS WITH LIGHTER PAYROLLS

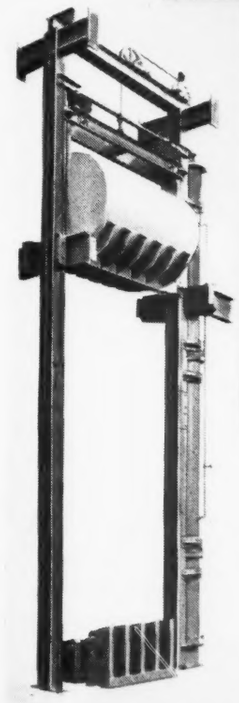


Fig. 1 — Loading Position

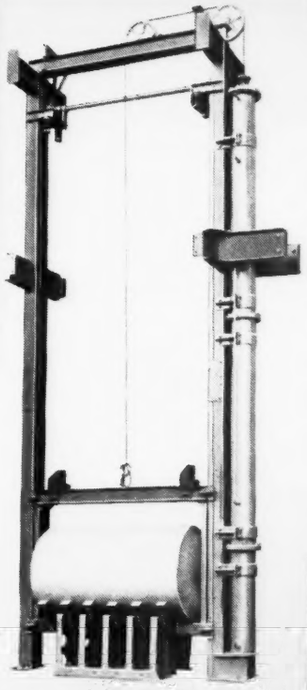


Fig. 2 — Discharge Position

You can cut handling costs on newsprint rolls at the flip of a latch with a G-W Pneumatic Lowering Machine. All you do is feed-in the rolls, any size, and they are on their way down to your presses or to storage, wherever you want them.

Any way you look at it, a G-W Tray Elevator or Pneumatic Lowering Machine saves you money. Besides saving labor, it eliminates damage to the rolls. Hinged loading fingers pick them up carefully, lower (or lift) them individually and discharge them gently, by gravity.

ALSO AVAILABLE ELECTRICALLY-OPERATED FOR RAISING AS WELL AS FOR LOWERING ROLLS

And if you want to eliminate "man-handling" altogether in your plant, investigate G-W's efficient line of economical Conveyors. You can get a low-cost set-up for mechanical handling of stereos, magazines, bundles, mail sacks, etc., throughout any part of your plant.

Write now and ask for a G-W Engineer to figure with you on a cost-saving solution to your elevating and conveying problems.

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Since 1814
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SPECIALISTS IN EQUIPMENT FOR MECHANICAL HANDLING OF MATERIALS

So! the Boss said

"Grease is Grease and Oil is Oil" Eh?

We won't dispute that the boss knows how to run a printing plant, but if he says all grease and oils are alike, he doesn't know his lubricants and it's up to you to tell him. Tell him this—that ALBANY TALLOW LUBRICANT is three times as effective as ordinary lubricants. You can't be responsible for burned out bearings, "down-time", and all other troubles caused by improper lubrication, unless he lets you use your judgment on lubricating his equipment.

Your judgment on lubricating of printing equipment should be: For presses equipped with grease cups, ALBANY GREASE NO. 3; for pressure fittings, ALBANY SOFT PRESSURE GREASE; for oil-lubricated presses, ALBANY VISCOUS PRESS OIL; and for gears, cams, chain drive—all types of presses—ALBANY LUBRICANTS NO. 93.

If you put it up to him fairly and squarely, he'll understand and he'll be delighted with the savings through the use of ALBANY LUBRICANTS.

Write today for Service Bulletin No. 10.

ADAM COOK'S SONS, INC
Mfrs. of Albany Lubricating Products
LINDEN, NEW JERSEY

sented an illustrated talk on the Star-starter. Otto Lepp, Mailroom Supt. of the Milwaukee *Sentinel*, following Mr. Katz's address, stated that the machine has done a very good job of tying bundles.

The next movie to be presented showed the mailing room operation in the plant of the Cincinnati Enquirer. Joe Walker, Mailroom Supt. supplied the running comment. This is the department which has the so-called "closed system" whereby if a tying machine should miss a bundle or the bundles should stack up too rapidly because of the necessity for changing the wire in a tying machine, the bundles will go around the conveyor loop and are automatically returned to the tying machine station again thus giving the tying machine operator a chance to catch up with the accumulated bundles and also to provide continuous conveyor operation.

Newsprint Situation

At the banquet on Monday night, Franklin D. Schurz discussed newsprint supply. Mr. Schurz is Business Mgr. of the South Bend *Tribune*. After he had completed his address, it appeared that newsprint will continue to be somewhat short of the anticipated requirements. He said a majority of the manufacturers are in an oversold position for 1951. It is possible that total production may be as much as 5% under the tonnage publishers have contracted for. One mill has warned that it may be as much as 10%.

Mr. Schurz stated newsprint mills could get greater production per machine if publishers would take more half and three-quarter rolls. It seems that in the case of one mill, long rolls take up 80% to 85% of the entire production of the mill.

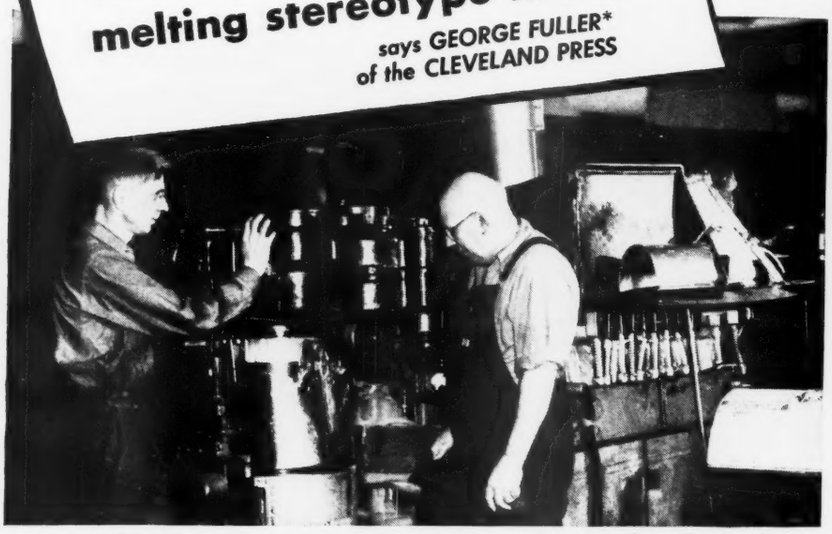
He also mentioned it is desirable to hold off newsprint rationing as long as possible. If rationing is necessary, and while a few newspapers would profit, it is felt rationing would be desirable.

Because of a peculiar monetary condition, it is possible that an even greater quantity of newsprint may be shipped to Europe from Canada. This will reduce the amount which is being shipped into the United States.

(*Continued on Page 82*)

"You can't beat G-E HEATERS for melting stereotype metal"

says GEORGE FULLER* of the CLEVELAND PRESS



G-E cast-in Calrod heaters in operation in the stereotype casting room of the *Cleveland Press*.

"For actual stereotype operation, you can't beat electric heat. Heat is always available in the intensity you need with the automatic controls that keep the heat range within five degrees of casting temperature. Maintenance problems are reduced to a routine monthly check. Since 1929, we have replaced only six heating units out of 40 installed on our furnaces."

CONVERT YOUR FURNACES OVER A WEEKEND

You can convert your stereotype furnaces to this fast, accurate, automatic method of melting stereotype metal over a weekend—with *no interruption* in production. G-E Calrod† heaters are *that easy* to install. Just contact the G-E Sales Office nearest you.

NEW FREE BULLETIN, GEA-5453, "Melting Stereotype Metal with Electric Heaters." Write to Sect. 720-27, *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

†Reg. U.S. Pat. Off.

*Veteran of 42 years newspaper experience and advisor on stereotype operations in the Scripps-Howard syndicate.

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HERE'S ONE BABY THAT NEVER NEEDS CHANGING!

NEW Miracle COLD TOP DEVELOPING TANK

Guarantees Crystal Clear Solution without Ever Changing Developer!

UNIFORM DEVELOPER MEANS UNIFORM PRINTS . . . . . .

Here's Why It's a MIRACLE of Consistency

- No developer changing
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CUTS COSTS by

Eliminating make-overs.
Stopping developer waste.
Saving on time and labor.

Tested and Approved under heavy-duty operation

$325.00 F.O.B. Chicago

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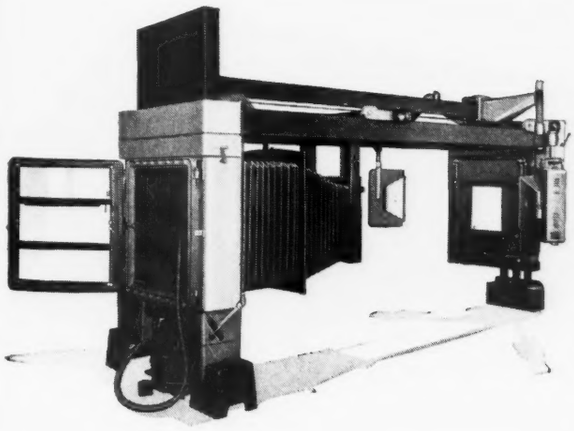
GENERAL PLATE MAKERS SUPPLY CO

522 S. Clinton St., Chicago 7, Ill. 64 Marietta St., N.W., Atlanta, Ga.

ROBERTSON QUALITY MEANS *MORE PROFITS FOR YOU!*



The engineering and constructional quality built into the Robertson Overhead Precision Camera adds up to greater profits for your shop. Built with aluminum castings, iron castings, and machine steel, the all-metal construction gives rigidity, strength, accuracy, and long life to the camera. Precision machining of all moving parts assures pinpoint accuracy which results in fewer spoiled plates and more profitable camera time.

All moving sections of the camera operate on precision sealed ball bearings made to Robertson specifications. The resultant fingertip ease of operation speeds work, thereby creating more profitable camera time.

Greater economy of operation is offered by Robertson because of the simple, sturdy, precision construction which makes the camera virtually maintenance free.

Robertson Overhead Precision Cameras are made in sizes from 24″ to 60″ and will handle any and every job in the shop.

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Pressroom Session

THE concluding session on the Tuesday, January 9 morning program, was devoted to the pressroom. Frank Dassori, Pressroom Supt. of the Detroit *Times*, and Curt White, Pressroom Supt. of the Indianapolis *Star-News*, presided.

Spangler Explains Cooksey System

Lewis L. Spangler, Vice President of Collmar Corp. discussed the Cooksey System of web control on newspaper and magazine printing presses. First, he discussed the development of the web detecting device in case of a web break so as to avoid disastrous results from wrapups or winders when a web breaks during press operation. The first of the three units employed in the Cooksey web break detector is a spring loaded arm connected to two micro-switches. One micro-switch controls activation of the other two units of the system while the second micro-switch is tied to the press control system and will not permit the press to be run at high speed until all three detectors are down on the web, or else are intentionally locked out of control. The second unit is a knife extending the width of the web which not only cuts the web but also clamps the oncoming edge of the paper in such a way as to prevent the severed edge of paper from the roll supply from going out of control and entering the printing unit. The severing and clamping device is solenoid operated through a circuit from the detector micro-switch. The third unit in the Cooksey System is called the trolley. This consists of a solenoid-operated rubber tired wheel which is also actuated by the detector micro-switch. It is located along a type roller immediately behind the printing unit and in the case of a web break where a loss of tension occurs behind the printing unit, serves to hold the tension of the web remaining in the unit until such time as it can be freed, thus clearing the unit and preventing backlash of the web into the printing area.

Mr. Spangler explained that a pair of adjustable detectors takes care of all web widths on each cylinder.

It is the claim of Collmar Corp. that the use of the Cooksey System of web break detection will save from 10% to 25% of printed waste. It is also said to be valuable in preventing damage to blankets inasmuch as blanket manufacturers have stated that 65% of blanket damage is due to wrapups or winders.

Co-chairman White then assumed charge of the meeting. With the cooperation of Earl Weiskittel, Pressroom Supt. of the Youngstown (O.) *Vindicator*, Mr. White had sent out a number of questionnaires to pressroom executives in the Great Lakes Conference district. He read the answers to the questions which were included in the questionnaire.

In response to the question as to the kind of blanket material used on press units, 40 answered that they used glass bead blankets; 17 said they did not use them; some replied that they used them on first impression, "because they are cheaper." One executive stated he uses them on second impression cylinders.

In response to the question: Do you underlay solids?, 34 answered yes and 35 replied in the negative. The next question was: Do you use rubber or synthetic rollers? 18 replied that they use rubber while 12 said they use synthetic, and 24 replied that they use both; however, 29 said they prefer rubber and 11 replied they prefer synthetic rollers.

An interesting discussion regarding the grinding of rubber rollers occurred at this time. In response to the question as to how often rollers are reground in different plants, 56 pressroom foremen answered that they are reground when needed.

Earl Weiskittel, Pressroom Supt. of the Youngstown (O.) *Vindicator*, stated that when rubber rollers get below 20 Durometer reading, they should not be used as form rollers because they will cause mottling in printing.

Determining Roller Fitness

L. J. Griner, Prod. Mgr. of the Detroit *News*, discussed a system for determining the condition of rubber rollers after regrinding to determine whether or not they are fit for further use and as to their

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- Router Bits
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- Double Coated Tape
- Dolly Trucks (to your specification)

PERFORATED PACKING FELT FOR FAIRCHILD PROCESS

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Quality copper plating and repairing cylinders.

The best in cylinder grinding and polishing machines; special heads (patent pending) — with precision controlled stone pressure and automatic feed.

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Doctor blade grinders, layon machines, etching trucks, laboratory presses, gravure presses, plating equipment, etc.

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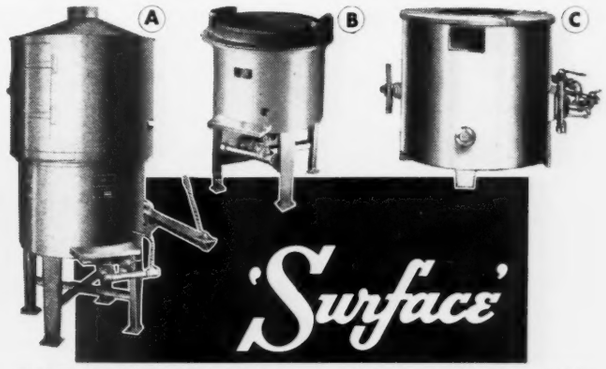

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B 'Surface' Atmospheric-Type Metal Remelting Furnace. Available in five sizes.

C 'Surface' Pressure-Type Metal Remelting Furnace for special, high-capacity applications. Available in seven sizes. Can be equipped with hood if desired.

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exact condition after being reground to see if they are still of use. He stated that in the past rollers were appraised as to fitness merely by judgment of the man in charge of the press. A system was devised for determining their fitness for use rather than their age. He described a special Shore durometer instrument by which readings of the condition of the surface of the roller could be determined quickly. With this instrument, 30 points was adopted as the standard for the fitness of a new roller when first received in the plant. All rollers in the plant are numbered and each roller's number is stamped on its stock. The number of the roller is carried on a card which shows not only the roller number but the press in which it is operating. The point range of 15 to 30 was adopted as being the determining factor whether or not a roller is fit for use and as to its condition for normal inking requirements. It was found that after some rollers which had been in use for some time had been reground they "came back" and tested 28 points on the Shore durometer instrument. He stated that any rollers testing under 15 points should be sent to the grinder. If a roller is 30 points or harder in surface condition and the roller is to be set at 4 lines or ½ in. contact with the plate, it has been found that the roller cannot be set properly. Through the use of this testing system, Mr. Griner stated the problem of plates bottoming on the web has been eliminated. In testing rollers on the press after the roller has been in use for some time and the instrument should register under 15 pounds, the roller is immediately sent to the grinder. (See article entitled *Alico Method for Setting and Keeping Records of Condition and Adjustment of Inking Rollers on Newspaper and Magazine Rotary Printing Presses*, Page 65, June 1950 issue of *Printing Equipment Engineer*.)

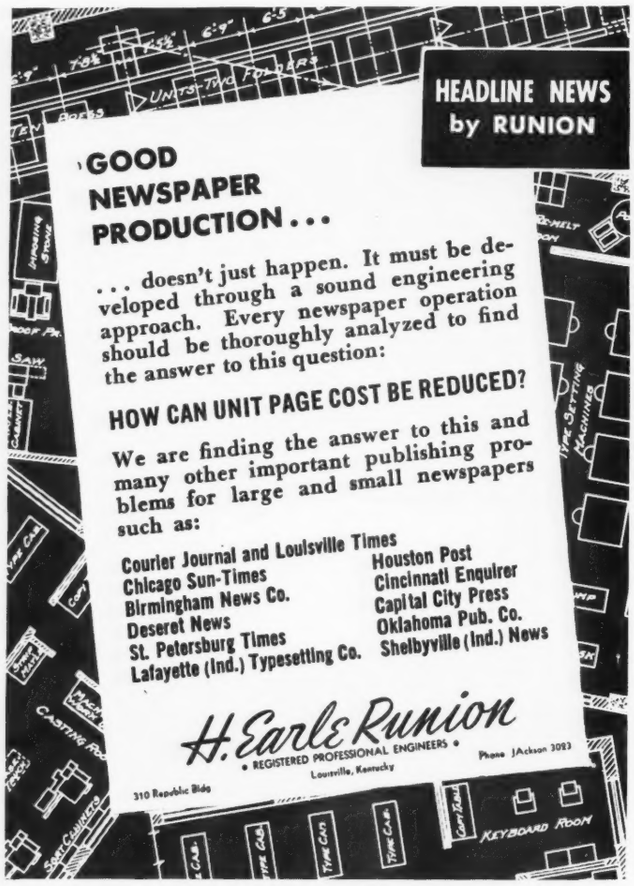
The eternal question of ink rub-off came for discussion as it does at most conference sessions. The problem is annoying particularly to pressroom executives who take pride in their craftsmanship. Just at the moment, however, no relief seems to be in sight. Someone stated that there are two types of news ink—one made with furnace black and the other with channel black. It was stated that more trouble with rub-off is experienced with the former. One of the executives quoted ink manufacturers by saying that they hope to clear up the difficulty. Chairman Frank Dassori remarked: "Even the green ink on U. S. money rubs off. If the U. S. can't overcome the problem, how can we avoid rub-off?" Someone made the remark that the problem of ink is just like anything else—it's a question of quality. If the publisher will pay a few cents more for the ink per pound, he will get better results. You get what you pay for. He concluded his remarks by saying: "As long as we don't have anything to do with the purchase of ink, we'll have to do the best we can."

Resuming the Weiskittel-White questionnaire which had been introduced earlier in the session, Chairman Dassori read the items in newspaper pressroom production which pressroom superintendents considered of greatest importance in sequence. These were as follows: (1) Plates, (2) Ink, (3) Paper, (4) Blankets, (5) Rollers, (6) Tensions, (7) Press deceleration and acceleration, (8) Plate thickness.

Flat Rolls

Lee Doll, Mechanical Supt. of the Indianapolis *Star-News*, related his company's experience with flat rolls. Sometime ago the flat roll problem became greatly aggravated. Management took up the trouble with the railroad from whom the paper is received in Indianapolis. In turn, newspaper officials and the officials of cooperating railroads got together to see what could be done about flat rolls. As a result, it was agreed that all rolls would be subjected to a plumb bob test. If the plumb bob did not drop clear through the core to the floor, the roll was rejected as unfit. The diameter of the rolls was reduced in order to pack carrier cars more efficiently to avoid the trouble. "One carrier," said Mr. Doll, "was found to be responsible for the major part of the trouble."

Everett Hall, Pressroom Supt. of the Dayton (O.) *Daily News*, said that a rewinder is used in the *News* paper warehouse. On badly flatted rolls, the rolls are rewound and the railroad is charged for the rewinding. Rolls not too badly flatted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We Are Doing All Right"

Back from the conference, Foreman Harry is quizzed about the kind of time he had—and did he pick up any new ideas?

"Oh, I heard of one or two good wrinkles, but mostly, boys, I sat there feeling good because we aren't getting any of the kind of troubles that some of the others are talking about. Sometimes new ideas don't measure up to the ones you already have—like staying with Certified Mats."

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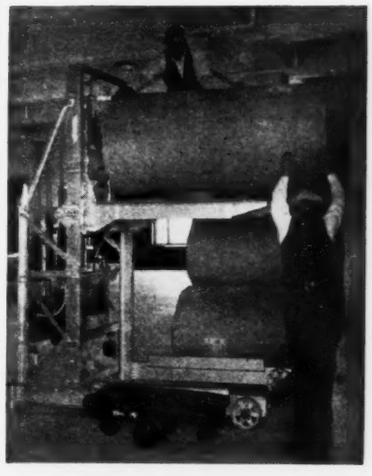

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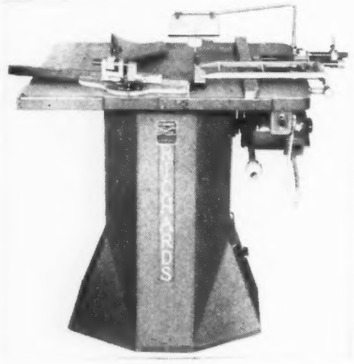

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are used on edition runs which are not of greatest importance.

A concluding feature of the Pressroom Session was the exhibiting of a movie illustrating paper handling methods at the Milwaukee *Journal*. Joe Albert, paper and truck department foreman of the *Journal*, supplied the running comment. The *Journal* has developed a very efficient system for handling incoming paper rolls and the picture was very informative.

Birmingham News

(Continued from Page 39)

the production of the stereotype department.

A short inclined conveyor section, called the Autolift, has been installed at the loading position of the 10 T. pot to facilitate the loading of used stereotype plates. One man lifts the plates, one at a time from a skid that has been returned from the pressroom, and deposits them on the Autolift which automatically conveys the plates to the pot. The stereotype plate handling equipment was furnished and installed by Logan Company.

In addition to the above, a plate registering machine was purchased to preregister the color plates when used. The two curved plate routers before which the operator stood on one leg while working, were replaced by two Sta-Hi MasteRouters that permit the operator to remain seated while working. At Runion's suggestion, Mr. Wilson ran compressed air nozzles controlled by a foot-operated valve, to each of these routers. This has cut down routing time by allowing the operator to blow away the accumulated metal chips without stopping to raise the glass door.

The flat casting department was located just across the aisle from the stereotype department and the capacity was increased about 100% to take care of the increased volume of work and anticipated future need. The new equipment purchased included an additional router, two additional saws, a rotary shaver to replace the old flat shaver, and 4500 lb. replacement for the old pot.

The Mailroom

The existing mailroom was seriously handicapped for lack of space. It was even necessary to use the main building lobby on Saturday nights to store preprinted sections in order to give the inserters working space. Even then some inserting had to be done on tables well away from the processing conveyors, making it necessary to carry papers back and forth between the inserting tables and the processing conveyors, and causing mailroom costs to rise unnecessarily.

Before making recommendations, Runion Engineers with the assistance of George Lawrence, Mailroom Supt., studied the distribution requirements, collecting specific information on the quantities of various types of bundles and the time allowed for processing them. Each processing operation was analyzed and complete job descriptions drawn up. From these the number of men needed

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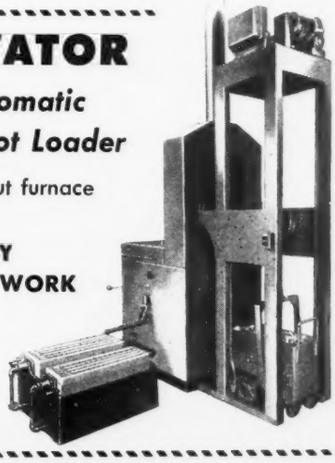

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'o do the job in the required time was calculated and the necessary amount of space and equipment determined. A new processing conveyor and wire tying machine were added to the two existing machines and three chutes were installed to take processed bundles direct from the wire tying machines to the loading dock. The old mailroom belt conveyors were re-worked and installed on the loading dock to distribute the bundles to the eight trucks that could be loaded at the same time. Runion Engineers also designed a portable loading dock conveyor used to transport the bundles automatically from the stationary loading dock conveyor, across the platform to the inside of the delivery truck.

In the mailroom, the three processing conveyors were located so that there was adequate space for storage of pre-printed material between them, making it necessary for the inserters working alongside of the processing conveyor, only to turn around to get additional pre-prints.

The three processing conveyors are supplied with papers from the eight press deliveries by means of 10 Cutler-Hammer delivery aprons, two of which are equipped with a switching arrangement. This makes it possible to deliver papers from either press to any one of the three conveyors.

All new mailroom conveyors and chutes were furnished and installed by Logan Company.

Included in the new mailroom layout is an office, galley, wire storage, tool room, and a fourth chute large enough to carry full mail bags to the loading dock.

Composing Room

An analysis of the composing room revealed that operations were handicapped by inadequate space for page makeup; not enough ad banks, saw-trimmers and mitering equipment; shortage of storage for national ad cuts and mats, and general lack of adequate working space throughout the whole area. After conference with the composing room foreman, Rod Calhoun, and the writer, it was decided to purchase two new 8 ft. ad banks, two new saws, a new cut storage cabinet, and a new Elrod stripcaster. The new layout including this equipment and allowing room for future expansion was drawn up. This rearrangement of equipment resulted in a 40% reduction in material travel, even with the additional space and equipment. From the average number of various type of items appearing in the paper over a certain period, the time spent in transporting materials was estimated. On this basis it was calculated that the 40% savings in distance traveled would result in 8% more work being accomplished with the same number of man-hours.

Engraving Department

Here the original arrangement of the equipment—as J. M. Camback, who is in charge of the engraving department, pointed out, made it necessary to do considerable back-tracking when proceeding from one operation to the next. The sinks, drains, and traps which were not resistant to the chemicals used, had, therefore, deteriorated rapidly and were requiring considerable maintenance. Plate developing was handicapped in hot weather by the lack of refrigeration.

In the new layout, working area was increased 50% to provide room for a new camera, refrigerated developing tank, proof press, and additional storage and office space. New stainless steel sinks with Duriron drains and bucket traps were installed to replace existing plate sensitizing and etching sinks. In spite of the increased area and equipment, it was possible to effect a 38% reduction in material travel, which it was estimated would result in a 5% increase in production for the same number of man-hours.

Building Around the Layout

Having established the requirements for all mechanical and non-mechanical departments, it was possible to definitely fix the size of the required building expansion. The completed layouts were submitted to the management of the *News* together with an analytical report covering the estimated cost of all new buildings and equipment, the moving expenses involved, and the additional revenue needed by the *News* to justify the expenditure required by the proposed program.

After a review of this report, the *News* decided to adopt Runion's plan, and engaged the architectural firm of Warren, Knight and Davis, Birmingham, Ala., to design and supervise the construction of the required building. Runion supplied the architects with detailed information on the equipment, plumbing, and electrical requirements, and weights of all new equipment.

While Warren, Knight and Davis were producing the plans for the building, Runion drew up plans and wrote specifications for all special equipment, and acting as the representative of the *News*, secured competitive bids. The proposals submitted were analyzed with respect to both quality and price and recommendations were made accordingly in each case as to which manufacturer should be awarded the contract. It is interesting to note that the total savings effected by the use of competitive bidding was over a hundred thousand dollars.

As the building plans progressed Runion acted as the coordinator between the equipment manufacturers and the architects, checking the drawings of both, to make certain that all equipment would fit into its proper place. He also assisted the architect in selecting suitable floor finishes for the various departments and in choosing the elevators, ventilating equipment, etc.

After the building contract was let to the Daniel Construction Co., Runion Engineers indicated the order in which each phase of the program was to be carried out, and also estimated the time necessary for each craft and the total time required to complete each phase of the work. Working from this schedule, it was possible to notify the manufacturers just when to ship equipment and, thereby, relieve the *News* of a terrific storage problem.

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February 1951

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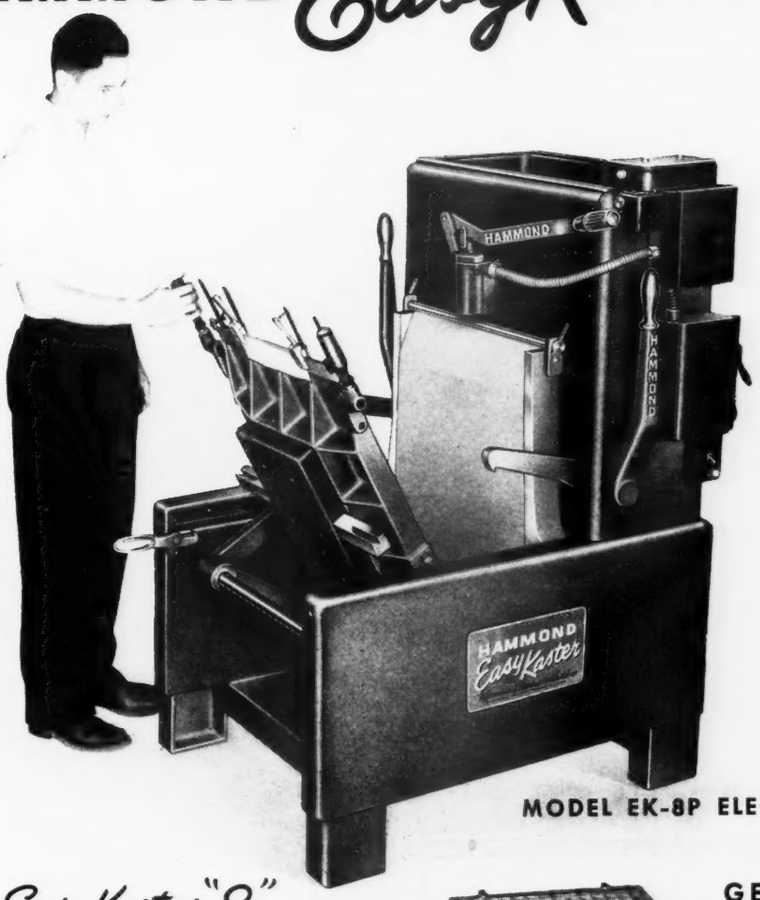

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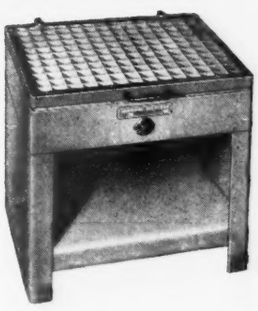

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